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GRADUATE PROGRAM IN HEALTH CARE ADMINISTRATION

A MARKETING STUDY OF CARDIOTHORACIC SURGERY  
AT WALTER REED ARMY MEDICAL CENTER

A GRADUATE MANAGEMENT PROJECT SUBMITTED TO  
THE FACULTY OF BAYLOR UNIVERSITY  
IN PARTIAL FULFILLMENT OF THE  
DEGREE OF MHA FOR THE  
GRADUATE PROGRAM IN HEALTH CARE ADMINISTRATION

BY  
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I wish to thank the surgeons of Walter Reed's Cardiothoracic Surgery Service, my very patient wife, and Homer and Barney.

## ABSTRACT

As managed care has come to dominate America's health care system, teaching hospitals across the nation are facing market pressures which place graduate medical education programs at risk. Administrators within academic medical centers are now realizing that an organization's long term survival will be influenced by the hospital's ability and willingness to adopt a business orientation (Denton 1995). With this shift in operational focus, administrators are turning to marketing as a strategic tool for improving their organizations' market positions (Cooper 1985). The cardiothoracic surgery service at WRAMC is attempting to expand its workload by developing and promoting a referral network. While the CT service has identified that excess capacity exists within WRAMC to perform additional CT procedures, the service had not conducted a marketing audit or produced a marketing plan.

Before the service could initiate any significant promotions, it had to first identify: (1) the number and type of potential referrals that existed within each catchment area; (2) the process by which patients in these catchment areas accessed CT care; (3) who made the decision as to whether a potential patient accesses care through the military health care system or through CHAMPUS; and (4) what factors influenced the decision makers to issue a non-availability statement or refer patients to military health care facilities. During the audit, four factors were identified as being relevant to market accessibility: strength of the civilian competitors, size of beneficiary population, attitude of referring military providers, and patient travel considerations. As the results of the audit suggest, the CT service needs to promote itself to its customers and build name recognition. Creating familiarity with and desirability for the service among patients and providers should negate some of the distance concerns.



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## CHAPTER 1

### INTRODUCTION

#### Background

As managed care has come to dominate America's health care system, teaching hospitals across the nation are facing market pressures which place graduate medical education programs at risk. The average cost per case in major teaching hospitals in 1992 was 71% greater than care provided in non-teaching hospitals (Prospective Payment Assessment Commission 1994). The country's emphasis on controlling health care costs provided capitated delivery systems, such as Health Maintenance Organizations (HMOs), the opportunity to expand their enrollment, which is presently over 50 million people. However, these health care organizations are unwilling to pay the premium for patient care that is provided in academic medical centers (Health Care Advisory Board 1994; Dial 1995).

Faced with reduced reimbursements from third party payers and changes in Medicare reimbursement rates, teaching hospitals are being forced to search out strategies that balance the provision of cost effective care with the financial demands associated with academic medicine. Maintaining adequate patient referrals for graduate medical education programs will become a greater challenge to program directors as managed care contractors seek out those institutions that can provide quality care at the lowest price. Many teaching hospitals have integrated into health care networks, allowing the facilities to take the center positions within hub-and-spoke delivery systems. Administrators within academic medical centers are now realizing that an organization's long term survival will be influenced by the hospital's ability and willingness to adopt a business orientation (Denton 1995). With this shift in operational focus, administrators are turning to

marketing as a strategic tool for improving their organizations' market positions (Cooper 1985).

Walter Reed Army Medical Center (WRAMC) is the largest military health care facility within the National Capital Area (NCA) (Fissel 1995). The hospital contains approximately 600 staffed beds, 16 operating rooms, and 148 staff physicians. WRAMC supports 32 graduate medical education programs, with 240 residents and 72 fellows (Fissel 1995). The hospital provided 835,395 outpatient visits, 23,403 dispositions, and 23,403 occupied bed days in fiscal year 1994 (PASBA2 1995). Within WRAMC's 40 mile catchment radius, there are two other military medical centers - Malcolm Grow (Air Force) and National Naval Medical Center, Bethesda (Navy) - two Army Medical Activities - Dewitt (Ft Belvoir) and Kimbrough (Ft Meade) - and a number of military clinics. In fiscal year 1994, there were 168,829 CHAMPUS eligible beneficiaries and 31,769 active duty service members residing in Army catchment areas in the NCA.

Walter Reed faces a number of challenges, two of the largest being the downsizing of the US Armed Forces and the implementation of TRICARE. The Base Realignment and Closure initiative closed two of Walter Reed's primary referral sources, Fort Devens and Fort Dix, as well as a secondary source at the Philadelphia Naval Shipyard. Kimbrough Army Medical Activity will be reduced to an outpatient ambulatory care facility in fiscal year 1997. TRICARE is intended to bring together the health care assets of the Military Healthcare System and the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), in a shared effort to support the system's beneficiaries (Blanck 1995). The implementation of the TRICARE program in fiscal year 1997 in Region 1<sup>1</sup> may force the military treatment facilities (MTFs) within the NCA to realign and consolidate portions of the area's health care delivery system. Colonel Robert J.

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<sup>1</sup> Encompassing Maine, Vermont, New Hampshire, Massachusetts, New York, Rhode Island, Connecticut, Pennsylvania, New Jersey, Maryland, Delaware, the District of Columbia, and northern Virginia.

Heckert, Jr., the Deputy Commander for Administration, states that WRAMC must become TRICARE ready. Preparation for TRICARE sparked integration efforts that have resulted in the formation of the Walter Reed Health Care System (WRHCS), a multi-hospital system composed of Walter Reed Hospital, Dewitt and Kimbrough Medical Activities, and a number of Army health clinics in and around the NCA.

In an effort to reduce duplication of clinical services in the NCA, the three medical center commanders sponsored a study by the Vector Corporation (Fissel 1995) to examine the potential for realigning or consolidating the graduate medical education (GME) programs at WRAMC, Malcolm Grow Medical Center (MGMC), and the National Naval Medical Center (NNMC). The three commanders agreed to follow the recommendations of the study. One of the initial results of the study was the relocation of WRAMC's obstetrics, labor and delivery, and neonatal intensive care services to NNMC.

Consolidation of services has created some concern among the tertiary care providers within the institutions. As GME programs are to some degree interdependent, there is fear that consolidation will result in a significant reduction in the number of residency and fellowship authorizations. For example, there is a perception among clinicians that the transfer of obstetrics to NNMC may negatively impact upon the training opportunities for WRAMC's surgical residencies and fellowships.

One of the subspecialties that has become a focus in the debate surrounding managed care and medical education is cardiothoracic surgery. Heart failure is the leading cause of hospitalization in the United States, resulting in more than two million admissions annually (McEachern 1995). Cardiac care expenditures for 1993 amounted to approximately \$99.6 billion (Pittam 1994). Of this total, \$13.5 billion may be attributed to coronary bypass procedures (Lutz 1995). Without accounting for inflation, the total cost for cardiac care is expected to rise to nearly \$150 billion by the year 2013. In the past,

cardiovascular medicine was a profit center for many teaching hospitals, accounting for as much as 50% of a hospital's positive cash flow. Under a capitated system, cardiac services become major cost centers for organizations. While conducting fewer open heart procedures may be appealing to financial managers, studies indicate that there is a significant increase in patient morbidity and mortality rates for hospitals conducting fewer than 100 coronary artery bypass grafts per year (Clark 1996, Shroyer 1996, and Crawford 1996). For military hospitals, CABG volume requirements are 150 cases per year for those facilities seeking Specialized Treatment Status (Assistant Secretary of Defense for Health Affairs 1994).

#### Conditions Which Prompted The Study

Colonel Dennis M. Moritz, Chief of the cardiothoracic (CT) service at WRAMC, is in the process of initiating a program to build up CT's practice. Dr. Moritz is motivated to increase CT procedures for three reasons: improving outcomes, supporting graduate medical education, and avoiding market share loss. His intent is to increase the number of CT procedures conducted at WRAMC by 25 to 50 percent. Using coronary artery bypass grafts (CABGs) as a baseline<sup>2</sup>, COL Moritz needs to increase the number of CABGs performed at WRAMC per year from approximately 200 to 250 - 300 cases. Literature sources indicate that higher case loads result in lower patient morbidity and mortality, and, in teaching hospitals, provide a better learning environment for residents and fellows (Fissel 1995). As a part of this plan, Dr. Moritz believes that WRAMC could recapture CHAMPUS eligible patients into the Military Health Care System who would otherwise access CT care from civilian providers. The CT service has already started to concentrate its efforts at the military hospitals located on Ft. Bragg, Ft. Knox, and Ft. Campbell. Dr.

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<sup>2</sup> COL Moritz considers CABGs to be CT's "meat and potatoes" workload.

Moritz and/or his staff visited all of these hospitals at least once within the last year. He considers these visits important in building WRAMC's name recognition among the professional staffs at Ft. Bragg, Ft. Knox, and Ft. Cambell. Dr. Moritz's concern about market share loss is supported by the findings of the 1995 Vector Study, which indicates that WRAMC may lose 26% of its CT case referrals when TRICARE is implemented in Regions 1 and 2 (Fissel 1995).

From fiscal year 1991 (FY91) to fiscal year 1994 (FY94) WRAMC's CT service performed between 194 to 215 coronary artery bypass grafts, averaging 202 per year (PASBA2). Dr. Moritz believes that his service has the capacity to perform 100 additional CABGs without incurring additional fixed costs. His minimum objective is to increase Walter Reed's CT workload by an additional 25%, or 50 CABGs per year. The five staff CT physicians at WRAMC should be able to support a beneficiary population of 700,000 individuals (Kronick 1993). Using the assumption that a fellow-in-training is equivalent to .5 staff physicians (Kronick 1993), the two CT fellows raise WRAMC's CT capacity to 850,000 beneficiaries. Within the 200 mile radius<sup>3</sup> of the NCA, there were 1,195,703 eligible beneficiaries (Appendix 1); thus, WRAMC's CT service could meet 71% of the demand for CT care within this area.

Up to this point, WRAMC had not conducted a market analysis to determine where it should focus its efforts in order to gain additional CT referrals. An examination of CT procedures (DRGs 104-111)<sup>4</sup> performed on CHAMPUS eligible beneficiaries at civilian hospitals during fiscal year 1994 (FY94)<sup>5</sup> indicated that there were large numbers of potential referrals within a 200 mile radius surrounding the NCA<sup>6</sup>. The greatest density

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<sup>3</sup>This distance was used as an inclusion radius because it is the measure used in determining a specialized treatment service's coverage area.

<sup>4</sup> See Appendix 2 for a listing.

<sup>5</sup> Obtained through the Retrospective Case-Mix Analysis System (RCMAS).

<sup>6</sup> See Appendix 3.

of these procedures were performed in TRICARE Region 2 in the Tidewater region of southern Virginia.

#### Statement Of The Management Problem

The cardiothoracic surgery service at WRAMC is attempting to expand its workload by developing and promoting a referral network. While the CT service has identified that excess capacity exists within WRAMC to perform additional CT procedures, the service had not conducted a marketing audit or produced a marketing plan. An audit would identify where CT needs to concentrate its promotional efforts in order to gain referrals. Before the service could initiate any significant promotions, it had to first identify: (1) the number and type of potential referrals that existed within each catchment area; (2) the process by which patients in these catchment areas accessed CT care; (3) who made the decision as to whether a potential patient accesses care through the military health care system or through CHAMPUS; and (4) what factors influenced the decision makers to issue a non-availability statement or refer patients to military health care facilities.

#### Purpose

The purpose of this project was to determine if there were potential markets for CT care that WRAMC's cardiothoracic surgery service could target for referrals and to identify what marketing methods could best be utilized by the service in order to develop exchange relationships with CHAMPUS eligible health care consumers in the selected markets.

## CHAPTER II

### LITERATURE REVIEW

Health care marketing literature can be described in terms of the general field and service specific. There are two books which stand out in the field of general health care marketing. Philip Kotler and Roberta Clarke's text, *Marketing for Health Care Organizations*, is considered by many academics to be the best in-depth description of health care marketing in existence (Neuhauser 1987). The other text which is frequently referenced is *Health Care Marketing, Issues and Trends*, co-written and edited by Philip Cooper. For cardiovascular specific marketing, the Health Care Advisory Board, a non-profit education and consulting organization, has published a significant number of studies that describe and discuss the marketing practices of hospitals and cardiovascular groups. The Cardiology Preeminence Roundtable, a separate division within the Health Care Advisory Board, provides a focused examination of the cardiovascular environment. Literature concerning marketing methods for military health care is modest. Major David Rubenstein's article, *A model for marketing in the military health care setting*, documents marketing efforts at William Beaumont Army Medical Center, as well as marketing plans at other military medical organizations (Rubenstein 1990).

The vast majority of health care marketing literature was written within the last twenty years. This is due to the Supreme Court's ruling in the late 1970's that restrictions on solicitation and price competition constituted a restraint of trade. Prior to this decision, most health care professions did not allow their members to openly participate in marketing programs (Kotler and Clarke 1987). After the Court's ruling, health care providers and administrators began to accept marketing as an acceptable business practice in the early 1980s (Cooper 1985). Even with the lifting of professional bans on marketing,



many health care organizations have continued to associate marketing efforts with the “selling” of health care (Cooper 1985). Phillip Cooper notes that there are distinct differences between the selling concept, which focuses on stimulating the consumer to buy a product with little regard to his or her actual needs (Cooper 1985), and the marketing concept. Marketing constitutes more than merely personal selling, advertising, or publicity. Effective marketing is based on planning and managing an organization’s exchange relationships with its stakeholders.

An organization’s exchange relationships should be consistent with its overall objectives. Marketing directors attempt to bring about voluntary exchanges with target markets through the in-depth analysis, planning, implementation, and control of deliberately conceived programs (Kotler & Clarke 1987). Operationally defined, marketing is the strategic analysis and implementation of services, which will be utilized by consumers, designed to meet a specific set of consumers’ needs and wants (Kotler & Clarke 1987, Cooper 1985). In the past, many health care organizations and providers have taken for granted the patient’s needs and wants. Institutions that are seeking to address a need in a market should attempt to incorporate the consumer’s desires during the formulation of a program (Mahoney 1994).

Although a few military health care organizations have initiated marketing plans (Rubenstein 1990), the Military Health Service System (MHSS) continues to view marketing primarily as a means of selling a product. In her presentation at the 1996 TRICARE Conference, Lieutenant Colonel Kathryn Ingram, Director of Marketing at the Office of the Secretary of Defense, Health Affairs, indicated that her office was presently not involved in the continuum of marketing operations. She stated,

“Maybe in the long term we (MHSS) will conduct marketing operations. At this point in time we are advertising, which is a part of the promotional aspect of marketing” (Ingram, 1996).

The current MHSS goal under the TRICARE marketing plan is the effective promotion of the three TRICARE health plans to active duty service members and CHAMPUS eligible beneficiaries (Rimer 1996).

Marketing strategies for health care are somewhat different than those of product-oriented businesses because health care organizations provide a service (Rakich 1994). The standard marketing concept focuses on the four elements or "P"s of marketing: price, place, promotion, and product. In the first edition of *Health Care Marketing, Issues and Trends*, Phillip Cooper modified these elements to fit the service orientation of health care. Cooper replaced product with service, place with access, price with consideration, and expanded promotion to include public relations and health education (Cooper 1985). Service is the sum of the support activities the organization can offer a patient. Service is more than direct care, it can include such things as customer information assistance, travel support, family care support, valet parking, private rooms, and any other benefit offered by the organization. Access denotes not only the location of a health care organization, but also the ease or difficulty with which patients gain entry into the facility's services. Consideration includes price as well as any other thing which the patient values that must be expended to access care (such as time). Promotion is the means or system through which an organization introduces, educates, or motivates the customer to utilize the services it offers (Rakich 1994).

A number of cardiovascular programs have initiated marketing efforts in order to maintain or increase their patient referrals. To these cardiovascular organizations, marketing has become an underlying strategy developed in order to ensure their long term survival (Health Care Advisory Board 1993). One point which justifies this concern about maintaining referrals is that, with the introduction of managed care, there has been a continual decline in both the growth of cardiac procedures and the reimbursement received

per procedure (*OR Manager* 1994). In its 1996 annual report, the Cardiology Preeminence Roundtable reported that since 1992<sup>7</sup>, the number of CABG procedures performed in the U.S. has leveled off to approximately 309,000 cases per year (Health Care Advisory Board 1996). The global case rate for CABGs is declining from a high of \$32,000 to an expected level of \$10,000 per procedure (Health Care Advisory Board 1996).

There is a large degree of variation between programs in respect to their targeted consumer and the method by which they develop exchange relationships. In general terms, the consumer is categorized as either a physician, payer, or patient (Health Care Advisory Board 1992). Marketing strategies which focus on physicians include: providing continuing medical education opportunities; improving two-way communication practices; and making state-of-the-art information technology available and accessible.

Cardiovascular organizations are attempting to develop relationships with payers by providing outcomes data, conducting focus groups, interviews, one-on-one meetings, and surveys, and offering competitive pricing for CT services. Marketing to patients is primarily through the development of community awareness about CT programs. Enhancing community awareness has been accomplished by publishing monthly newsletters and conducting public service announcements (Health Care Advisory Board 1994a). Patient satisfaction surveys are another means of strengthening ties with existing and potential markets. An organization can improve the effectiveness of a marketing audit through the use of surveys in order to understand better the needs and wants of health care consumers (Khayat 1994).

Customer relations, specifically hospitality, is an area in which health care organizations are beginning to utilize the lessons learned in other service industries, such

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<sup>7</sup> The year which is considered to be the "high-water mark" for CABG procedures in the U.S.

as the hotel and airline industries (Cooper 1985). In terms of marketing potential, patients who receive tertiary care will often require further inpatient care later on in their lives. Facilities which provide a congenial and supportive environment for their patients will bolster their organizations' ability to gain repeat customers (Cooper 1985).

Academic health care facilities which provide secondary and tertiary medical care face significant challenges in developing strategic marketing plans. Phillip Cooper indicates that this area of health care marketing is one of the most complex and arduous sectors because the demand for care at this level tends to be involuntary. Typically, it is not the consumer but the primary care physician who recognizes the need for acute care. Health service activities (HSAs) which provide high technology, high costs services need to acknowledge the role the primary care physician plays as agent in the exchange relationship for tertiary and secondary care. During the development of the marketing plan, the HSA should actively weigh the impact of the patient-provider relationship on potential secondary and tertiary care referrals (Cooper 1985). James Terwiliger, Vice-provost for administration at the UCLA School of Medicine, and a senior executive at UCLA Medical Center, echoes Cooper's thoughts on the potential utility that marketing provides academic health care organizations. Success in the managed care marketplace can be dictated on a hospital's ability to respond to internal and external change. In Terwiliger's words, "If you're simply reacting to the market, you're dead" (Hagland 1996, 25).

### CHAPTER III

#### METHODS AND PROCEDURES

The study followed the strategic marketing concepts outlined in *Managing Health Services Organizations* by Rakich, Longest, and Darr<sup>8</sup> (Appendix 4) and *Marketing for Health Care Organizations* by Kotler and Clarke as a basis for conducting the marketing audit. Sources of information for the audit included Retrospective Case Mix Analysis System (RCMAS) data, Defense Medical Information System (DMIS) data, PASBA2 data, personal interviews with staff and patients from WRAMC and other military medical facilities, findings from the recent WRAMC patient satisfaction survey, and promotional data and marketing strategies obtained from major civilian competitors, such as Duke University Hospital<sup>9</sup>. The project, or marketing audit, consisted primarily of an assessment of the internal and external environments. An audit is essential for predicting the potential success of any future marketing plans, as well as identifying if WRAMC is prepared to initiate marketing activities and what factors may limit marketing efforts (Cooper 1985). The internal assessment involved mapping out how WRAMC delivers CT care and which services and activities within the organization impact on the delivery of CT care. The critical path for coronary bypass procedures was the starting point for this process (Appendix 6). The external assessment consisted of five steps which: identified (1) what was the potential patient referral base for each catchment area within a 200 mile radius around Walter Reed; (2) how do beneficiaries accessed CT care within each area; (3) which civilian health care organizations constitute the competition and how do they market their services within each area; (4) the decision makers within each of the catchment areas; and (5) the wants, needs, and desires of the decision makers. The

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<sup>8</sup> As adapted from *Marketing audits for health organizations: A practical guide* by Mary Jane Schlinger.

<sup>9</sup> See Appendix 5.

collection and analysis of the data followed Kotler and Clarke's research process model shown in figure 1.

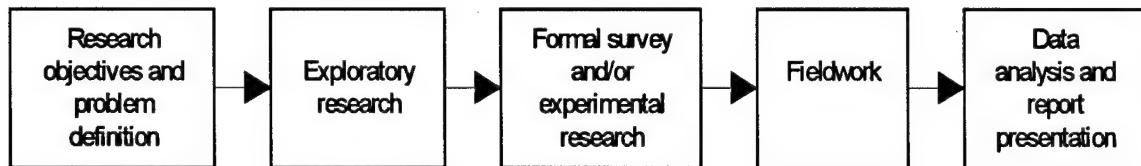


Fig. 1. The marketing research process.

#### Exploratory Research.

DMIS data was used in the market segmentation process to identify the location of CHAMPUS eligible beneficiary populations. PASBA2 data was used in the internal audit as a measure of WRAMC's current CT patient population. RCMAS data was used in the identification of potential markets for CT care. Because PASBA2, DMIS, and RCMAS data have been used in past studies (Carter 1995, Fissel 1995), this study assumed that the information is both valid and reliable. Promotional materials from competitors were used as a source in the environmental assessment to form a benchmark for promotional requirements for future marketing plans.

#### Formal survey.

The data from the interviews and the recent patient survey were used to indicate the goals and objectives of WRAMC's CT staff and the experiences of past CT patients. In the analysis of the information obtained through the interviews, each respondent's answers were compared to those obtained in other interviews in order to ensure the validity of the responses and the reliability of the summarized description of the decision making process. Because the patient satisfaction survey used in the internal assessment was the same

survey utilized by the hospital during its 1995 patient survey, the validity and reliability of the instrument had already been accepted.

#### Fieldwork.

The fieldwork involved site visits to McGuire Air Force Base, Fort Lee, Fort Eustis, Fort Belvoir, and Naval Medical Center Portsmouth. During the visits, physicians and patients were interviewed in order to determine their needs, wants, and desires in regards to CT care. Physicians were asked to provide information about the civilian competitors for CT care in their respective markets. Beneficiaries, who were interviewed after the physicians, were also asked about their views concerning the local civilian providers. The interviews provided qualitative findings. A quantitative or formal survey using a research instrument would have provided a larger sampling of patient perceptions. Kotler and Clarke note that qualitative interviewing is appropriate in circumstances, such as this, in which time and expense are considerations.

#### Data analysis and presentation.

In accessing possible CT referrals, the RCMAS data was classified by catchment area and potential<sup>10</sup>. In order to be considered significant, a catchment or metropolitan area should have had at least ten CHAMPUS CT procedures performed at civilian hospitals per year. The four classifications were: markets outside of an MTF catchment area with a significant density of CHAMPUS CT procedures; markets outside of an MTF catchment area without a significant density of CHAMPUS CT procedures; markets within an MTF catchment area with a significant density of CHAMPUS CT procedures; and markets within an MTF catchment area without a significant density of CHAMPUS CT procedures. Procedure density determined which markets were targeted and the

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<sup>10</sup>Market potential was measured by patient density within a catchment area or city.

catchment/non-catchment area classification determined the marketing method which would be most effective in building exchange relationships. The remaining four steps in the external marketing audit were: how patients access care; identification and evaluation of the competition; identification of the decision makers; and identification of the needs, wants, and desires of the consumers. These steps were accomplished only after the markets were segmented and targeted. Site surveys and interviews were the primary means of completing the final portions of the external audit.

Individual interviews with beneficiaries , providers, and health care finders were used to determine the method by which beneficiaries access CT care within each area. The beneficiaries interviewed were selected from the waiting areas in the cardiology, internal medicine, and pediatric clinics, the primary referral areas for cardiothoracic surgery. Physician interviews were with providers from the same clinics. Although health care finders are not necessarily present in every facility, CHAMPUS advisors also provided information concerning CT care needs.

The local military providers were able to indicate which civilian health care organizations constitute Walter Reed's competition. This source produced valid data since cardiothoracic care is a highly specialized practice and only a small number of practices are needed to support a market. The providers' information was confirmed by matching it with provider information codes contained in the RCMAS data base system.

The determination as to who constitutes the decision makers within each market segment was based on an examination of CT referral procedures for the market. Determining the wants, needs, and desires of the decision makers was accomplished by interviewing these individuals and examining past practices.



## CHAPTER IV

### RESULTS

The results of the market audit (Appendix 7) indicate that WRAMC's CT service should focus its efforts initially within the Fort Lee catchment area and then attempt to enter the markets supported by Naval Medical Center Portsmouth and Fort Eustis. During the audit, four factors were identified as being relevant to market accessibility: strength of the civilian competitors, size of beneficiary population, attitude of referring military providers, and patient travel considerations. The determination as to the relative strength of the civilian competitors was based on the nature of the facility (community hospital, academic medical center, cardiovascular specialty hospital); the willingness shown by the organizations to accept only the CHAMPUS reimbursement; and the affinity shown by the military providers and the beneficiaries towards these institutions. The size of the beneficiary population was determined by examining the DMIS and RCMAS2 data. Interviews with the military physicians furnished an insight as to the level of support providers were willing to render towards Walter Reed's attempt to enter their respective markets. In addition to the gaining providers opinion, the interviews demonstrated that physicians were strongly influenced by their patients' preferences as to where they are referred for care. Patient travel considerations were gauged in terms of patient responses during the interviews, distance of the facility from WRAMC, and availability of military transportation. The results of the survey data was scaled as either being positive, negative, or neutral. In order to graphically display the market findings, the scaling was converted to represent the competitors strength and beneficiary concerns in terms of high, moderate, or low. For example, a preponderance of responses favoring a competitor

resulted in the strength of competitor being shown as “high”. Figure 2 is a summary of this market analysis.

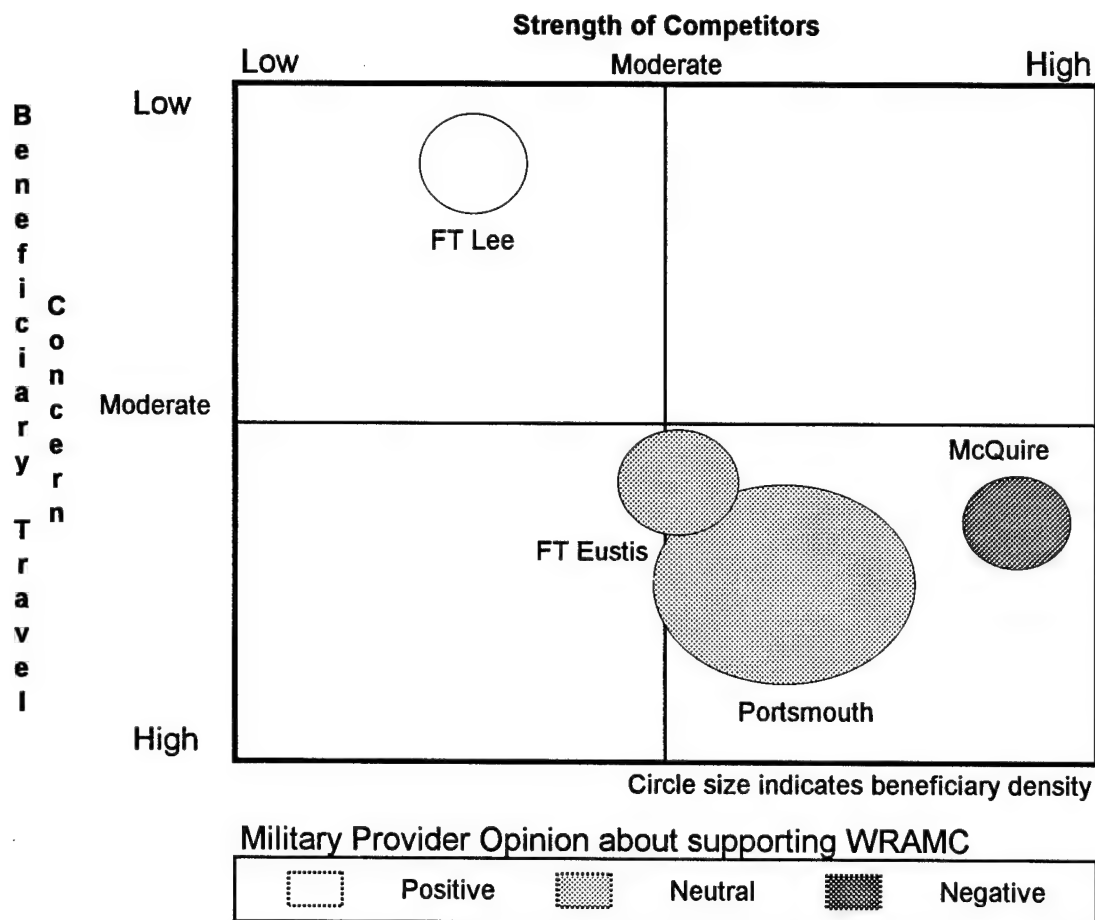


Fig. 2. Market analysis for cardiothoracic care within a 200 mile radius of Walter Reed.

The market in Fort Lee’s catchment area shows the greatest potential for WRAMC’s CT service to quickly gain entry and recapture 10 to 12 cases per year. This is due to the willingness of the medical staff at Kenner Army Community Hospital (KACH) to participate in the venture, the availability of military transportation from Kenner to WRAMC, and the positive patient opinion in regards to receiving care at WRAMC. The

markets in Portsmouth's and Fort Eustis's catchment areas are worth consideration because of their significant beneficiary density. Physician and patient opinions about Walter Reed were neutral. WRAMC should be able to capture 10% of the CT referrals from this area, representing 12 additional procedures annually. This percentage was estimated using the physician interview results. Of the possible referrals from McDonald and NMCP, 60% are likely to remain in the civilian market, 25% will be referred to NNMC, and the remaining 15% could be referred to WRAMC. A graphical analysis is shown in figure 3, with the total market of CT procedures based on the CHAMPUS procedures for FY94. WRAMC's possible market share was calculated by removing 40% of the procedures (estimated emergencies cases) from the total market. WRAMC's probable market share was determined by using the market summary estimates (0% from Walson, 100% from Kenner, and 15% from McDonald/NMCP).

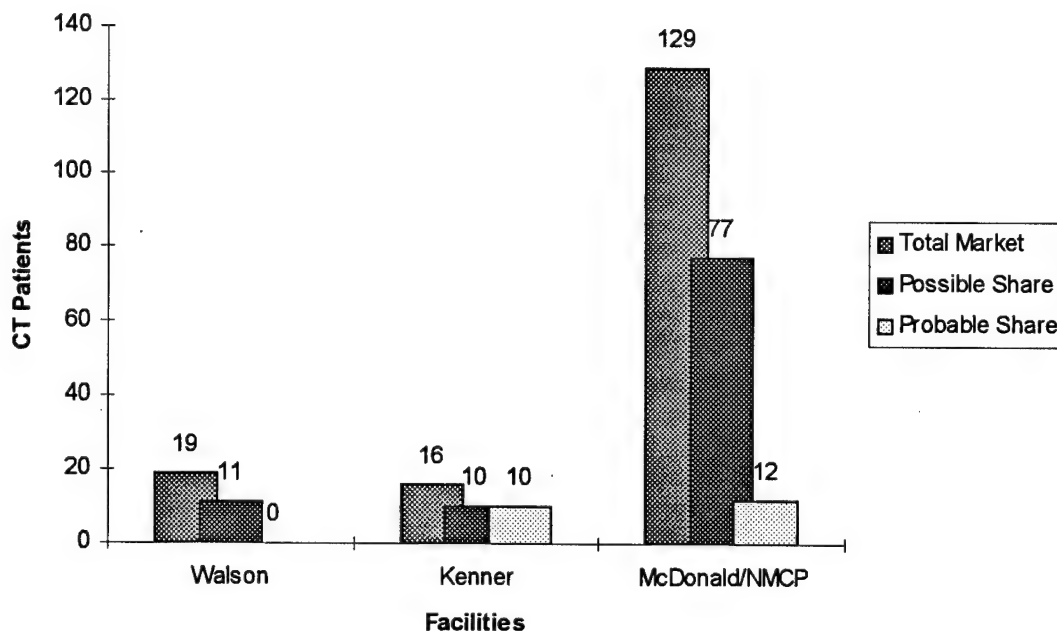


Fig. 3. Cardiothoracic Market penetration potential.

## CHAPTER V

### DISCUSSION

The primary contribution from this study was the identification of the referral decision making process within the targeted markets. In situations where WRAMC is losing potential CT cases, it is due to the inability of referring physicians to consult with WRAMC's cardiology clinic. In the circumstances in which direct access is available, specifically patients from Portsmouth Naval Hospital, this audit indicates that Walter Reed should promote its services to the beneficiaries of care as well as to the potential referring physicians. In theory it is the primary care provider who makes the decision as to whether or not a patient is referred to Walter Reed. Presently, with the exception of Walson Hospital, the providers present the patients with the option of going to Walter Reed or going out on CHAMPUS for CT care. Even if Walter Reed and NNMC obtain CT STS status so that all CT care within 200 miles should first be referred to the hospitals, current policy, as stated by Colonel Dunn (the coordinator for TRICARE STS designation), dictates that those patients who express a desire not to go to the military facilities will be given a non-availability statement.

It became apparent during the audit that Colonel Moritz's attempt to increase referrals will face numerous internal and external obstacles. But within these obstacles there exists opportunity. In its 1996 review of the nation's cardiovascular programs, The Health Care Advisory Board indicates that an organization which is opportunistic and initiates new strategies, is likely to be the dominant player within a market (Health Care Advisory Board 1996). In order to increase workload, the CT service will need to build alliances and develop interest in its program. Assuming that Walter Reed can meet the expectations and demands of the providers and beneficiaries within these three markets,

the CT service could gain 20 to 25 procedures within the first year and possibly expand the number to approximately 40 referrals the following year. The financial implications associated with this additional workload are currently under review by the Walter Reed, NNMCM, and the Region 1 and Region 2 TRICARE Lead Agents. Presently the analysis is focused on the make or buy decision. One of the other issues surfacing within Walter Reed revolves around the opportunity cost of using the OR time for CT procedures rather than other types of cases, such as neurosurgery. At the present time, Colonel Kussman and his staff are in the process of determining the hospital's core missions. With further funding cuts and mandated staffing reductions on the horizon, decisions concerning base line work levels need to be made before services and departments are allowed to increase outside referrals. In considering these constraints, the CT service should recognize that the greatest setback to referrals into Walter Reed would be the inability of the hospital to deliver the product which it is promoting.

In developing strategies to recapture patients into MTFs, there has been an assumption that patients and civilian providers will not have an impact on the decision. It appears that the military is functioning on the premise of "build it and they will come". Yet, even with STS designation, military treatment facilities have been told that in order to avoid litigation, patients requesting a non-availability statement (NAS) should be accommodated. This lack of understanding markets is a dangerous course of action in a period in which the DOD is being forced to examine how it utilizes its manpower and in which civilian providers are becoming more competitive. As TRICARE matures, the civilian marketplace may attempt to displace military hospitals by appealing to Congress on the basis of cost, and appealing to beneficiaries on the basis of quality and access.

The marketing program at Walter Reed is in its infancy, with a new marketing coordinator presently focusing her attention on educating the medical staff about

TRICARE. In addressing the need to develop the core mission of the facility, Colonel Kussman and his staff must know where unmet demand exists and what services can be downsized. Cardiovascular services are a prime example to support this argument. There is a nation-wide oversupply of cardiologists which is unlikely to fall in line with demand until 2016 (Health Care Advisory Board 1996). With fee schedules in decline, Medicare and CHAMPUS have become the payers of choice for many practice groups. There are markets in which Cardiovascular groups have already begun to control the cardiovascular care for DOD beneficiaries through negotiated contracts (Goss 1996). The total fee for a PTCA in some markets has been driven down to less than \$9,000 (Health Care Advisory Board 1996). If a military hospital were to consider making a change in the level of cardiology care it provides, one of the questions which should be asked by the hospital's leadership is, "Can the organization compete with the civilian providers now, and will the military hospital be competitive in the foreseeable future?" This issue would assuredly be considered by the TRICARE contractor in the region. Without accurate information about the current and future market supply and demand, it would be difficult for a commander to make a sound decision.

In assessing the business practices of the military health care organizations in the North Atlantic Region, a contradiction exists between the need to develop business plans, even as far down as product line, and the lack of understanding about internal and external markets. Within the civilian health care sector, marketing is quickly becoming one of the cornerstones of short and long range planning (Kotler and Clarke 1987). While WRAMC and the Region 1 TRICARE agency have developed marketing services, the primary focus of these organizations continues to be the education of the medical staff and beneficiaries about the TRICARE system. In the last two months, the Region 1 Lead Agent has taken steps to improve its knowledge about its service markets, but the agency is far from

having a firm grasp as to where military facilities can compete with civilian providers. This is an under-utilization of a valuable resource, and commanders within Region 1 need to rectify the situation before the TRICARE contract is initiated.

As the Military Health Care System is forced to conduct itself as a business, it needs to utilize the tools that are already being used by its civilian competitors. Marketing is only one of these tools, but without it, a medical organization cannot effectively conduct strategic and financial planning (Kotler and Clarke 1987). The rapid rate of change in today's health care organizations is becoming, to use a military term, the fog of war which clouds the battle field of the health care market. Providing our leaders with accurate and timely information about internal and external environments may not be the key to winning the campaign, but the failure to practice effective marketing may very well be the reason for losing the crusade.

## CHAPTER VI

### CONCLUSIONS AND RECOMMENDATIONS

In considering the audit results, there are recommendations that are relevant to each level of the Military Health Care System. The primary concern of the study was how can Walter Reed's cardiothoracic surgery service increase and sustain the number of referrals it receives from MTFs outside of the NCA. The secondary findings relate to how Walter Reed and the Military Health Care System can improve marketing efforts.

The primary factor which is restricting patient referrals is the four week patient wait time for cardiology appointments. This backlog has allowed civilian cardiologists access to patients who cannot wait four weeks to see a military cardiologist. These civilian providers have also become health care assets to military providers who can not get what they deem to be adequate support from WRAMC, NNMC, or NMCP. At the present time, once a beneficiary is seen by a civilian cardiologist, any requirement for cardiothoracic surgery is likely to be performed by a civilian CT surgeon.

There are two possibilities for resolving the problem of patient access in a manner which is favorable to the CT service. The first solution would require Walter Reed's cardiology service to send a cardiologist to facilities, such as Kenner, which have a strong need for cardiology support. The administrator for the Department of Medicine has been approached about this possibility and is open to examining its feasibility. The problem with sending out Walter Reed's cardiologists is that some of the patients may not be able to wait a week or longer to see the visiting cardiologist; this becomes a quality of care concern. The other method for recapturing these patients involves a cooperative effort between military CT practices and the civilian cardiology groups. This solution is likely to meet opposition internally from the military cardiologists and externally from the civilian CT surgeons. But, as pointed out by the internists and family practice physicians at Fort



Eustis, what it offers is a reduction in CHAMPUS expenditures while still providing an readily accessible cardiologist to the patients.

As the results of the audit suggest, the CT service needs to promote itself to its customers and build name recognition. Creating familiarity with and desirability for the service among patients and providers should negate some of the distance concerns. Using other organizations as benchmarks, the service should develop promotional tools that serve to educate beneficiaries about the program. Information pamphlets, such as the one used by the cardiothoracic program at Duke University (Appendix 5), would serve as a device to provide potential patients with information about the physicians (education and training), the service (types of procedures performed and what the treatment is likely to involve), and Walter Reed (how to get there, lodging, dining, and other support activities). A promotional strategy which is experiencing rapid growth is the use of the World Wide Web to connect with patients and providers. Columbia-Presbyterian Heart Institutes' home page (Appendix 8) is a good indicator as to how a cardiovascular program can communicate its capabilities to potential customers. With WRAMC already having set up a web site, the CT service should have little difficulty in producing a similar home page. Taking a lesson learned from WRAMC's Urology service, the CT service should continue its efforts to link with referring physicians through site visits and continuing medical education lectures. The Health Care Advisory Board strongly endorses this method of developing relationships as being an effective means for improving referral opportunities.

A subject which is not directly linked to referrals but does play a role in the CT service's access to patients is the retrospective non-availability policy for emergency cases. June Wendt, the Director of Dewitt's Health Care Finder service, noted that when a patient is seen by a civilian provider for an emergency cardiovascular problem, the provider and hospital bill CHAMPUS through a retrospective non-availability basis. In

confirming this matter with ProWest<sup>11</sup>, the company agreed with Ms. Wendt's analysis and noted that they currently did not have a set of guidelines that specified what medical conditions required emergency cardiovascular surgery. ProWest was interested in the possibility of working with the military's cardiovascular physicians to develop these guidelines and distribute them to civilian providers.

Walter Reed and the Region 1 TRICARE Lead Agent need to reconsider how they are utilizing their marketing resources. While the education of beneficiaries and staff about the TRICARE system is important, leaders need to be aware of the ramifications of ignoring market trends, particularly threats posed by civilian competitors. Colonel Heckert's directive for WRAMC becoming "TRICARE ready" supports the necessity for better coordination of information regarding existing and potential markets. With the implementation of the TRICARE contract less than two years away, the marketing staffs should incorporate the development of a marketing information system into their strategic plan. By utilizing existing data networks, the system could provide timely and usable information to services, departments, and the organization's leadership. The creation of this system would be a major step in supporting the Military Health Care System long term survival. It would allow the organization to function as a business and compete with civilian organizations on a level playing field. WRAMC should also conduct a formal survey of the military providers at its feeder hospitals. The results of the survey would provide information concerning which services at Walter Reed are not meeting the referring providers needs or expectations.

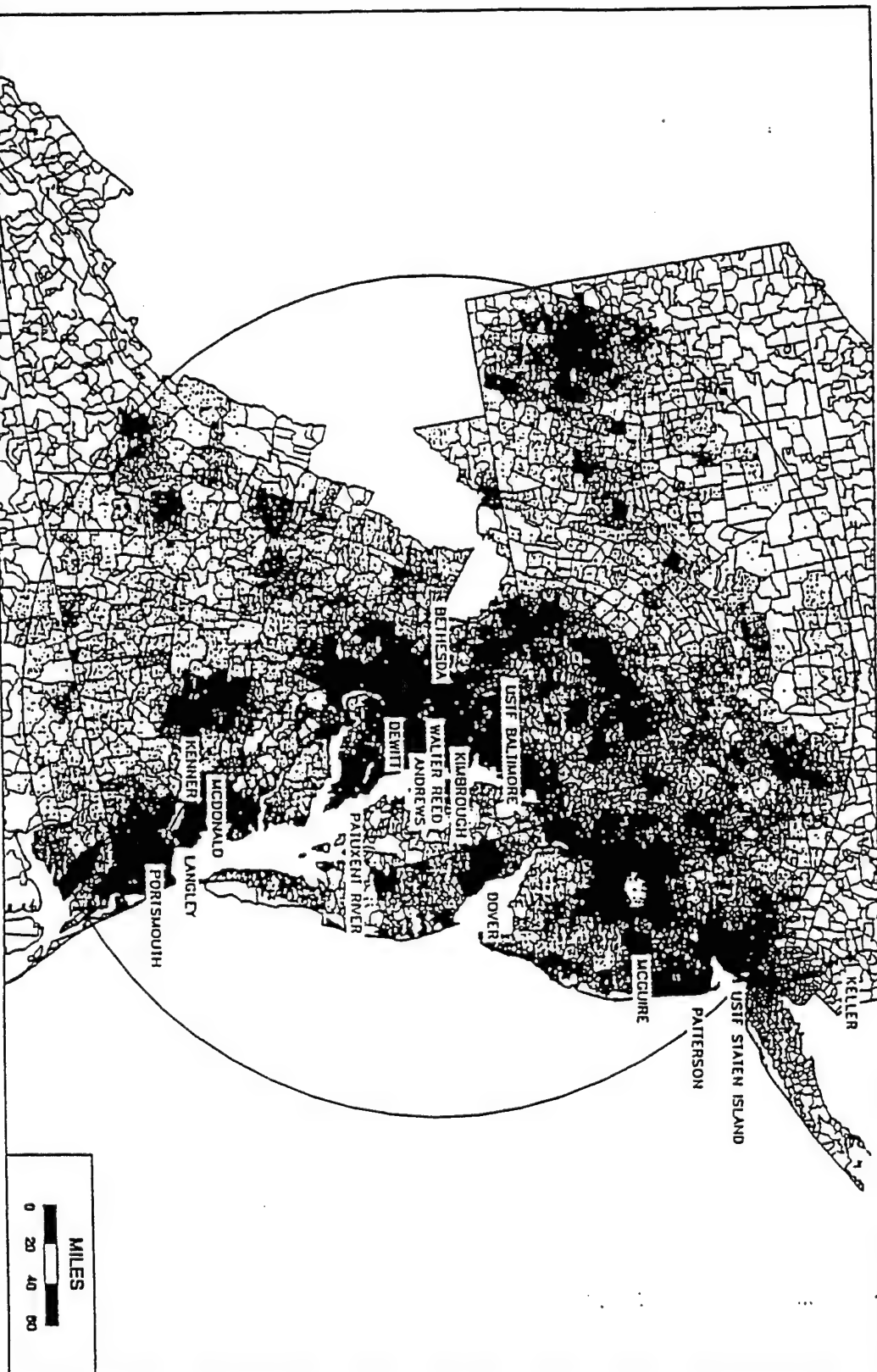
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<sup>11</sup> The fiscal intermediary for northern Virginia.

## Appendix 1

This map, produced by the DMIS Information Center, illustrates the beneficiary density as of 30 September, 1994 within a 200 mile radius of Washington DC.

**TOTAL POPULATION WITHIN 200 MILES = 1,195,703**  
 (1 DOT EQUALS 1 BENEFICIARY)



SOURCE: DMS INFORMATION CENTER, STRATEGIC MAPPING, INC.

## Appendix 2

The following page lists the diagnosis related groups, as used by HCFA and CHAMPUS, that represent the majority of cardiothoracic surgery procedures and all open heart procedures.

Diagnosis Related Groups  
For Cardiothoracic Services

<u>DRG</u>	<u>Procedure</u>
104	Cardiac valve with cardiac catheterizing
105	Cardiac valve without cardiac catheterizing
106	Coronary bypass with cardiac catheterizing
107	Coronary bypass without cardiac catheterizing
108	Other cardiac procedures
109	Other cardiac procedures without pump
110	Cardiac valve with cardiac catheterizing
111	Cardiac valve without cardiac catheterizing

### Appendix 3

The table on the next page lists the number of procedures, categorized by DRG, that were performed by civilian providers and billed to CHAMPUS in fiscal year 1994 within TRICARE Regions 1, 2, and 5. Figures 1 through 7 on the following pages topographically indicate the number of procedures, categorized by DRG, that were performed by civilian providers and billed to CHAMPUS in fiscal year 1994 within TRICARE Regions 1, 2, and 5. There were no patients reported to have undergone other cardiac procedures without pump, DRG 109, within the RCMAS data. Map points are located within the patients' zip codes as listed within RCMAS.

Table 1: Number of procedures by DRGs 104 - 111

Figure 1: DRG 104

Figure 2: DRG 105

Figure 3: DRG 106

Figure 4: DRG 107

Figure 5: DRG 108

Figure 6: DRG 110

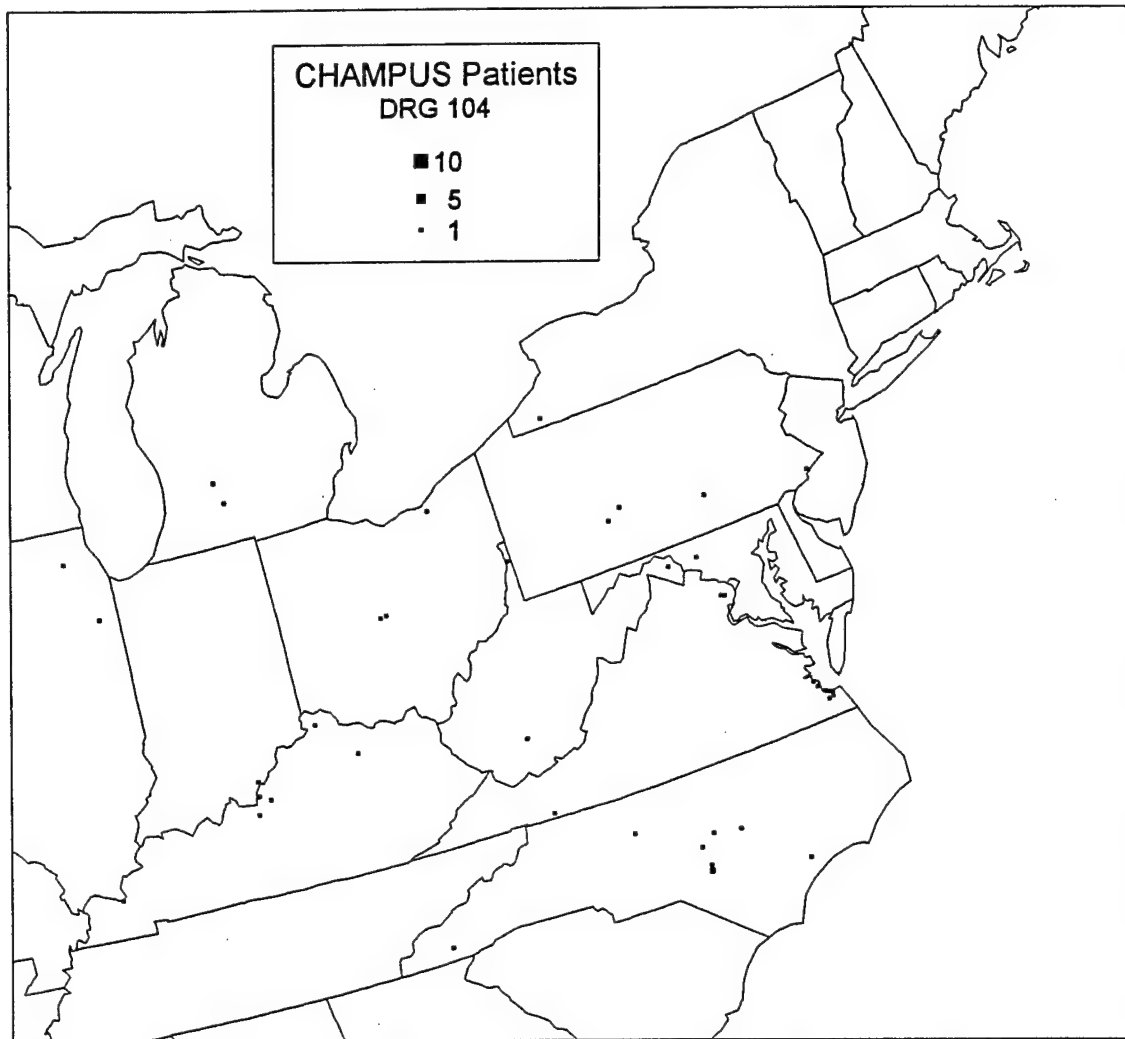
Figure 7: DRG 111

CHAMPUS Cardiothoracic Procedures  
in Regions 1,2,5  
(FY94)

<u>DRG</u>	<u>Procedure</u>	<u>Number</u>
104	Cardiac valve with cardiac catheterizing	48
105	Cardiac valve without cardiac catheterizing	73
106	Coronary bypass with cardiac catheterizing	278
107	Coronary bypass without cardiac catheterizing	268
108	Other cardiac procedures	102
109	Other cardiac procedures without pump	0
110	Cardiac valve with cardiac catheterizing	169
111	Cardiac valve without cardiac catheterizing	59

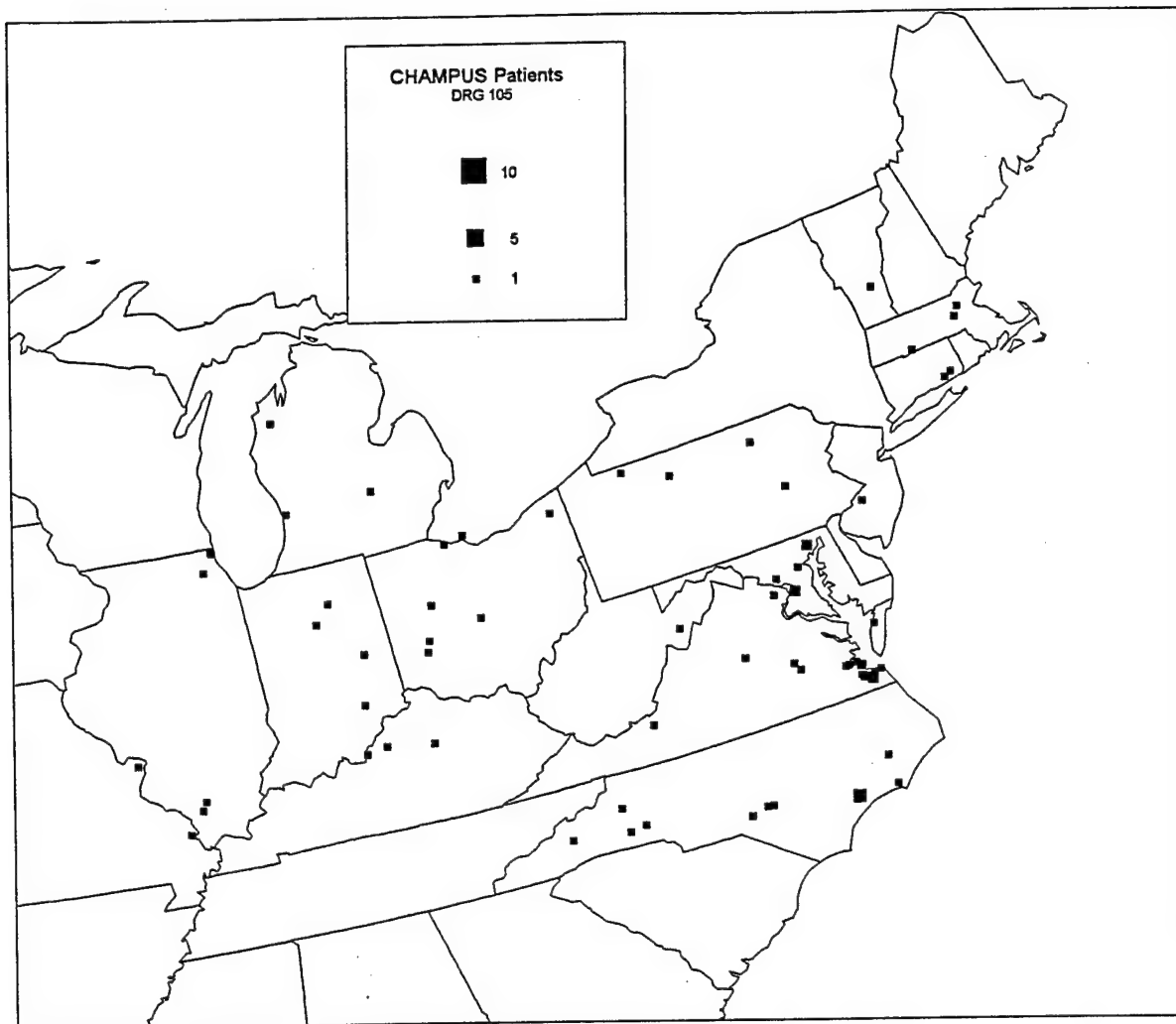


DRG 104 - Cardiac Valve Procedure  
(With Cardiac Cath)



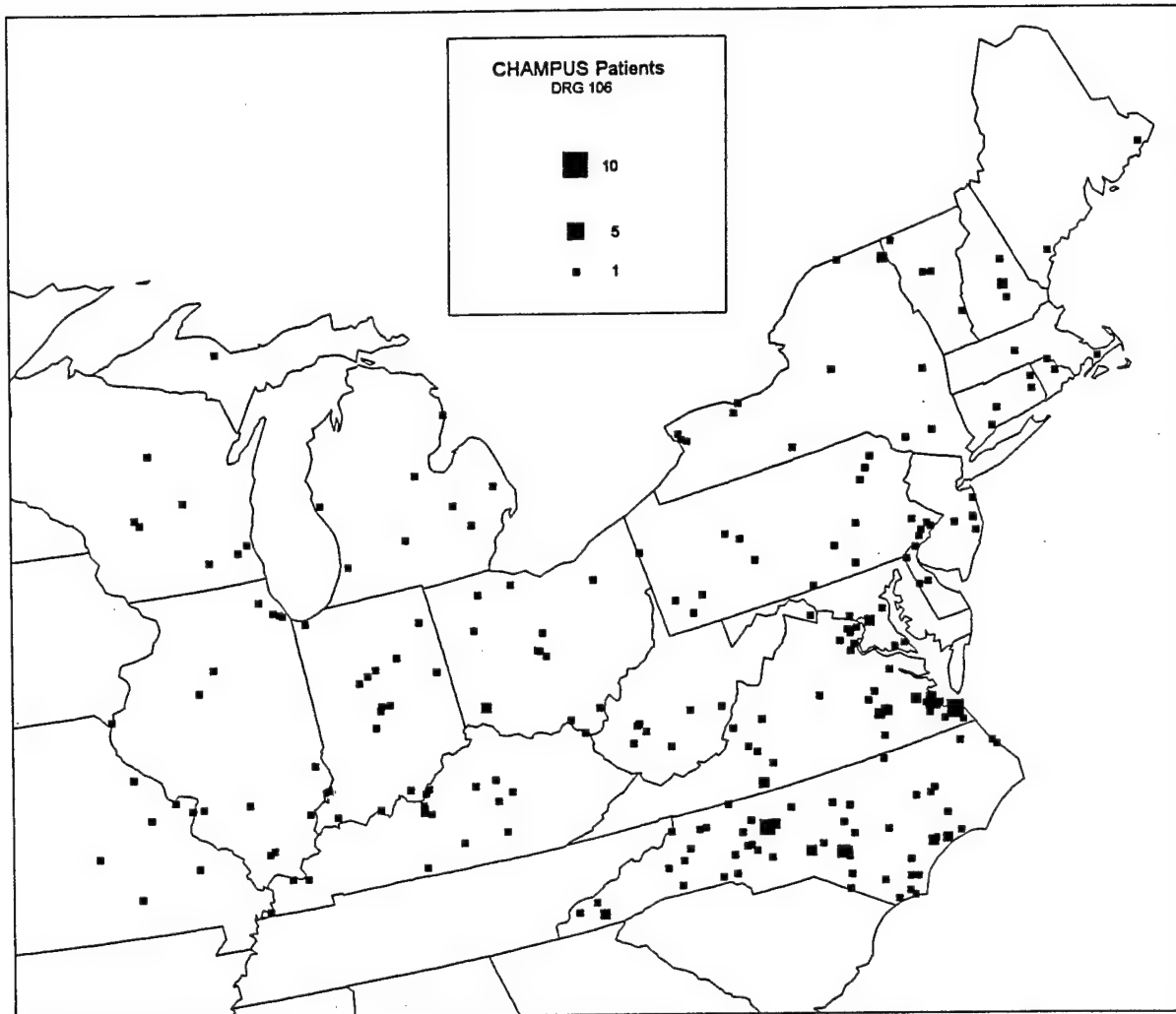
SOURCE: RCMAS2 data set for FY94

DRG 105 - Cardiac Valve Procedure  
(without Cardiac Cath)



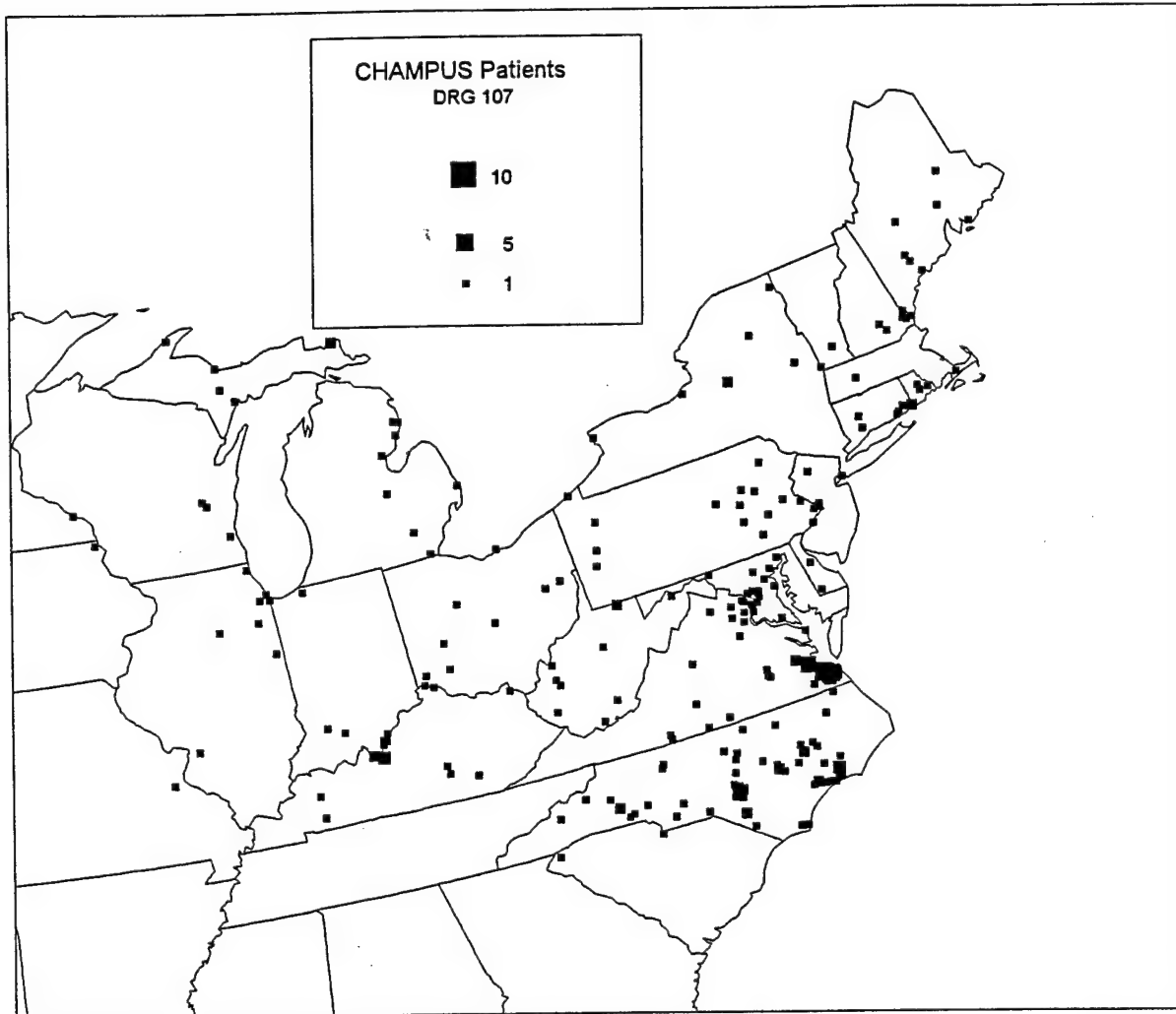
SOURCE: RCMAS2 data set for FY94

DRG 106 - Coronary Bypass  
(with Cardiac Cath)



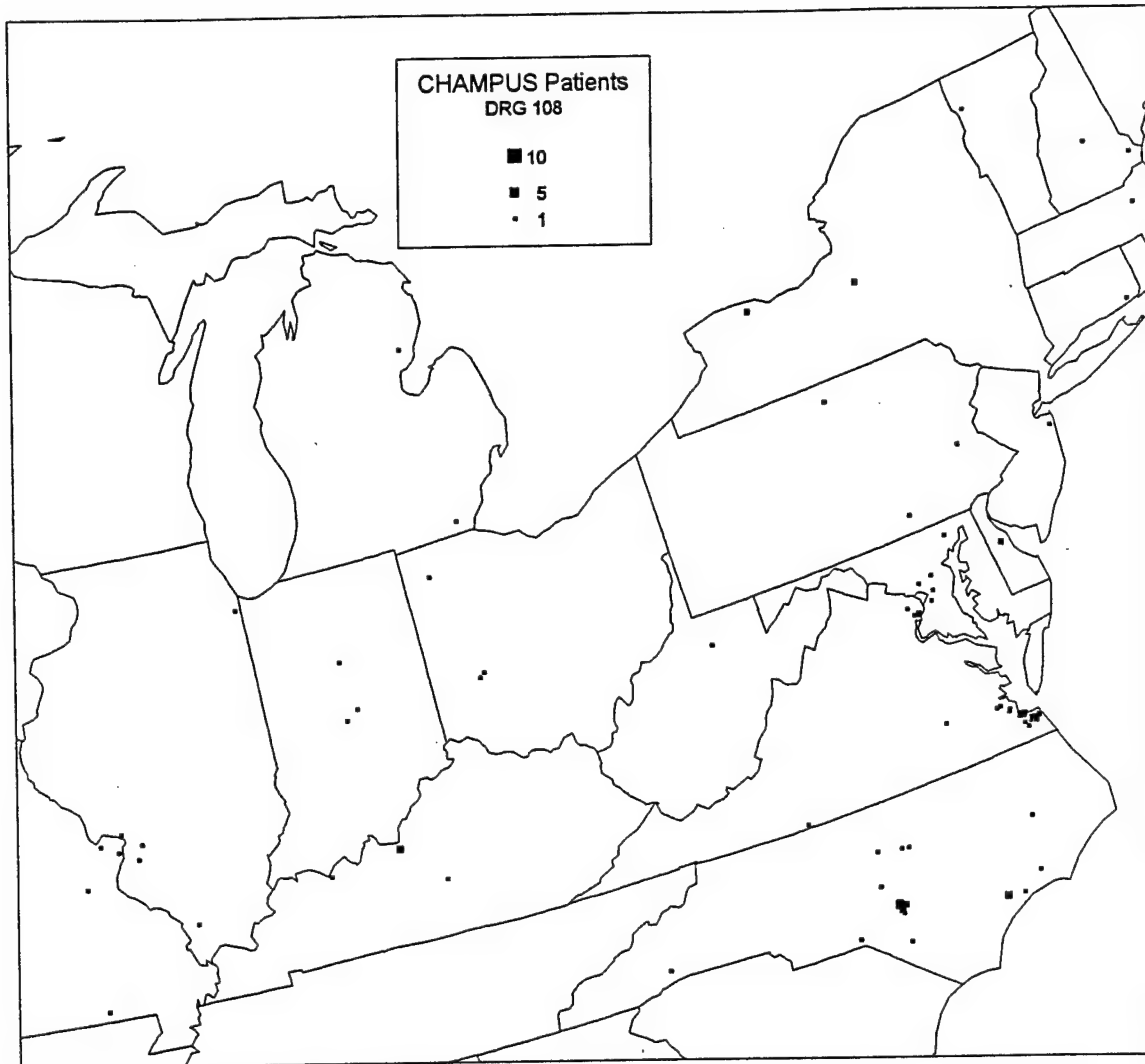
SOURCE: RCMAS2 data set for FY94

DRG 107 - Coronary Bypass  
(without Cardiac Cath)



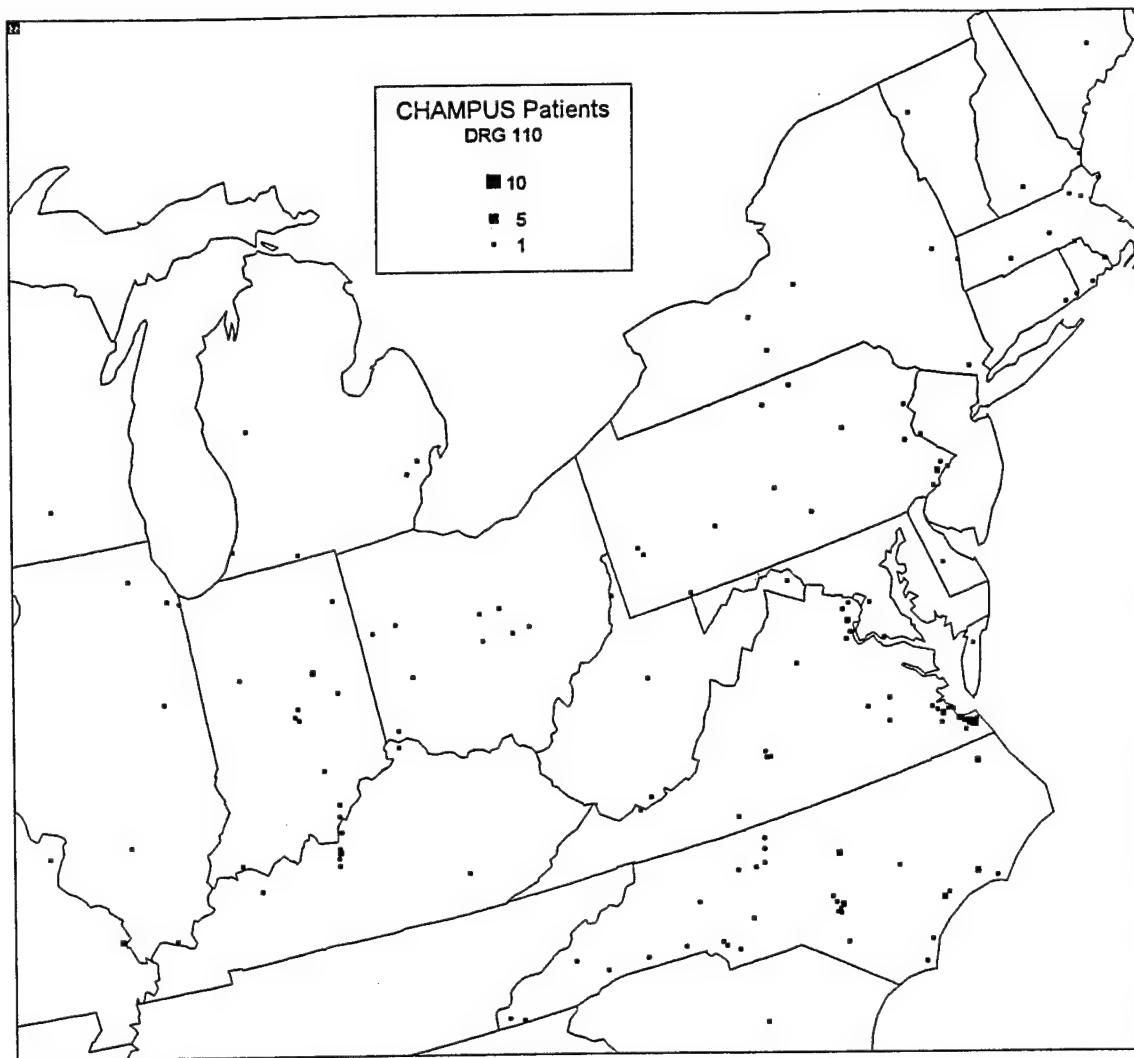
SOURCE: RCMAS2 data set for FY94

## DRG 108 - Other Cardiothoracic Procedures



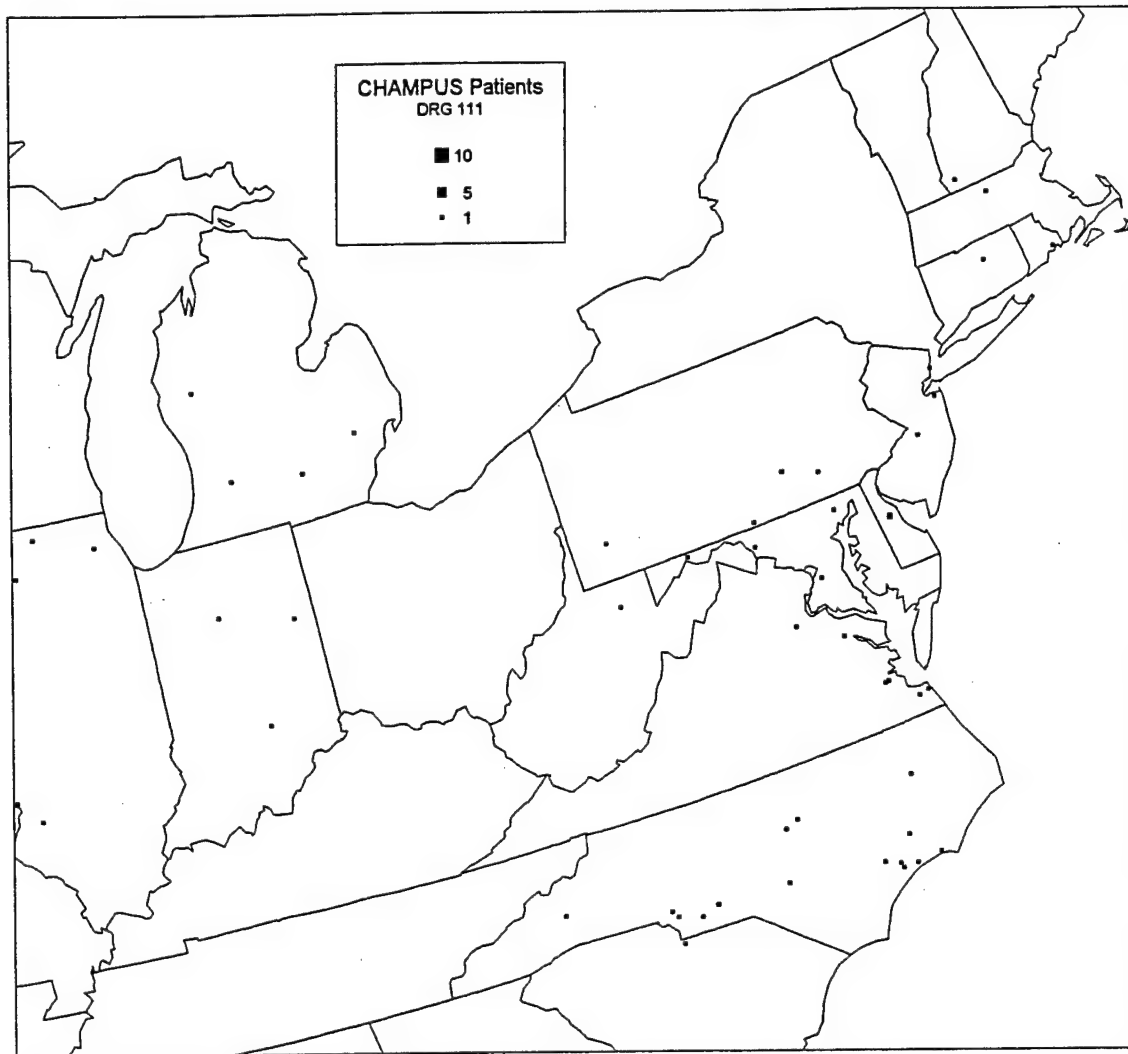
SOURCE: RCMAS2 data set for FY94

DRG 110 - Major Cardiovascular Procedures  
(with Cardiac Cath)



SOURCE: RCMAS2 data set for FY94

DRG 111 - Major Cardiovascular Procedures  
(without Cardiac Cath)



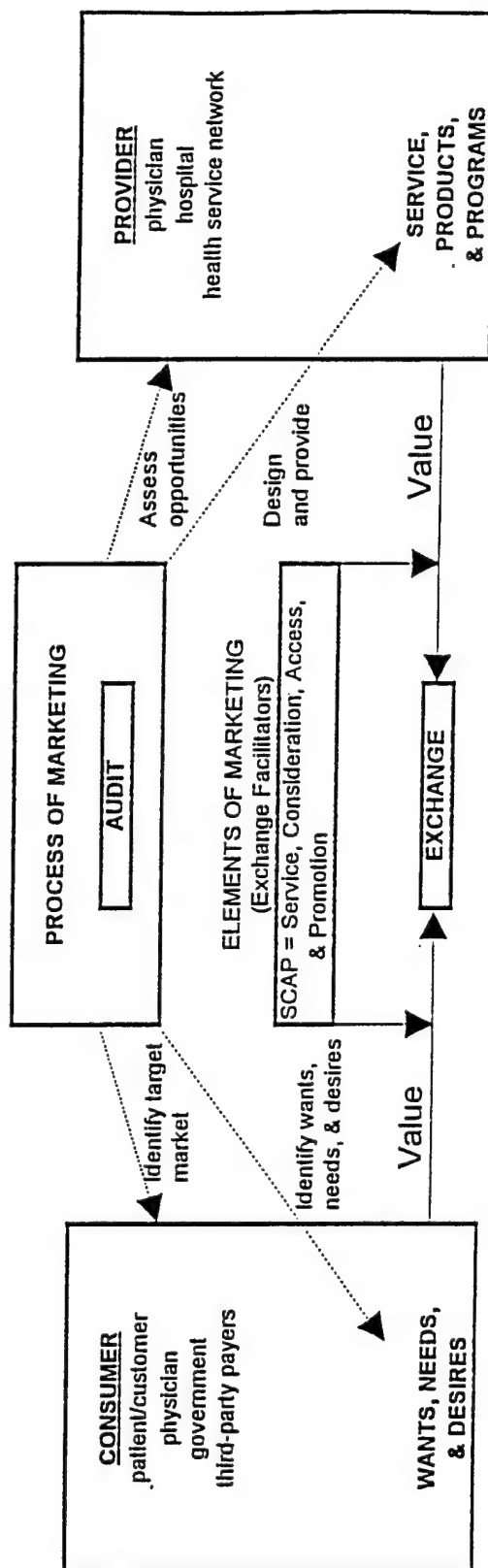
SOURCE: RCMAS2 data set for FY94

#### Appendix 4

The diagram on the next page illustrates the Marketing Concept and method by which an organization can evaluate the exchange relationships between providers and consumers within a market.



# Marketing Concept



Source: Rakich 1992, 314.

## Appendix 5

The following page is the patient referral sheet provided to the physicians at Womack Army Medical Center by Duke University Medical Center.

Patient's Name \_\_\_\_\_

Appointment Date \_\_\_\_\_ Time \_\_\_\_\_ Location \_\_\_\_\_

DUMC Physician \_\_\_\_\_ Phone (919) \_\_\_\_\_

Referring Physician \_\_\_\_\_ Phone ( ) \_\_\_\_\_

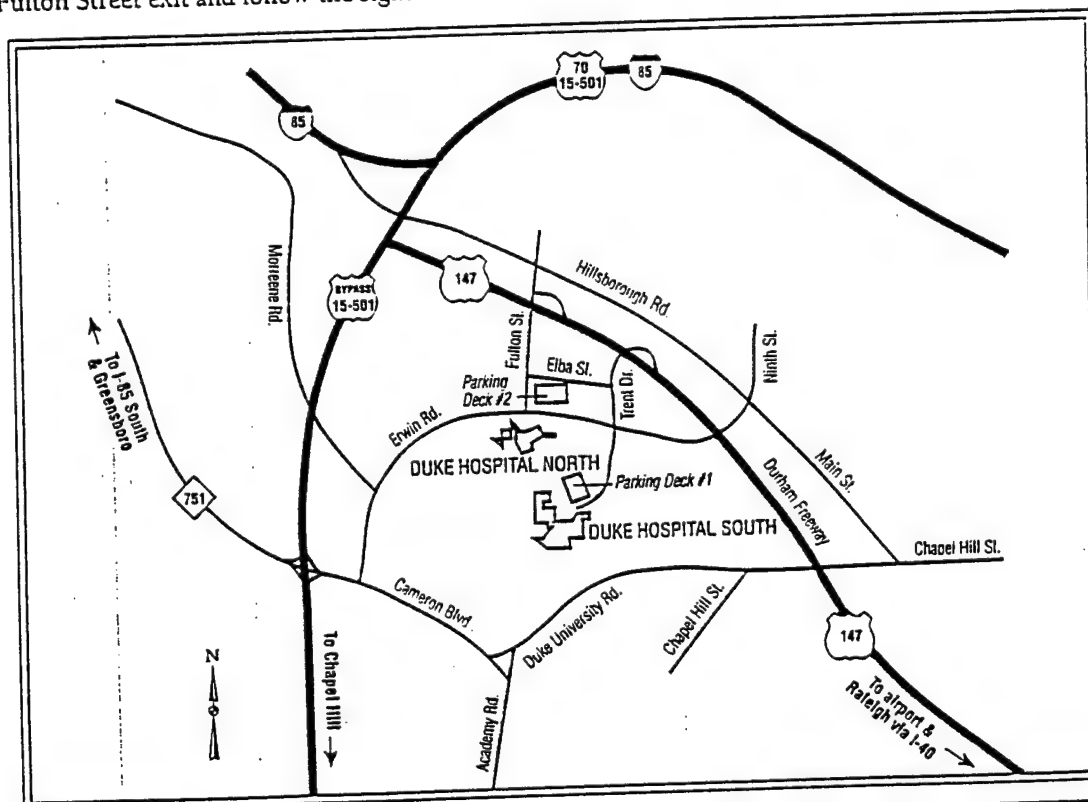
### DIRECTIONS TO DUKE UNIVERSITY MEDICAL CENTER

*Coming by I-85 from the south or west*, take the NC 751/Duke University exit. About 1.4 miles after exiting, turn right onto NC 751. After 3.0 miles you will pass under the 15-501 overpass. Take the next left (Erwin Road) and follow the signs to the hospital.

*Coming by US 70 from the east or I-85 from the north*, take 15-501 Bypass South, "Duke University/Chapel Hill." Take the Durham Freeway exit to Fulton Street exit and follow the signs.

*Coming by US 15-501 Bypass from the south*, take the Durham Freeway exit to Fulton Street exit and follow the signs to Duke and VA hospitals.

*Coming by the Durham Freeway (147) from the east*, follow the freeway into Durham. Take Fulton Street exit and follow the signs.



## Appendix 6

The four tables contained on the following pages map out the critical path for a patient receiving a coronary artery bypass graft with a cardiac cath at Walter Reed Army Medical Center. The path was created by Marisa Mize in coordination with the professional, nursing, and ancillary support staff at Walter Reed. The tables include all of the tests, medications, treatments, and evaluations that would be encountered with the majority of the patients undergoing a CABG procedure.

CABG Critical Path DRG #106 (w/ cath) 12-9 days	Date				Date		Date	
	Fast Track YES	NO	Admission	Cath Day	Pre-operative	HD OR/ICU	HD ICU/VD 46	POD 1
TESTS			CBC, Ptt, ct., P1 and P2, PT/PTT, CXR, EKG, U/A		Current (within 7 days) CBC w/diff, ptt, PT/PTT, U/A & C&S, P1-3 w/Ng, CXR, EKG, PFT's, Sickledex if appropriate, T&C 4U PRBC's, 6 pk platelets, 2pk's FFP.	Stat on return from OR: CBC w/platelets, CXR, P1 & 2, Fibrinogen, PT/PTT, NG, PO4, ABG & MIVO2. ABG 30 min after each vent change. HCT, K, GLU, ABG & PT/PTT, q2h x 8hr then q8h. 12 lead EKG 2h postop when temp 36 C. (CBC, lytes stable)	CXR, EKG, CBC, PT/PTT, ABG q8h until extubation, P1-3 w/ NG (Hct > 20)	
CONSULTS			Cardiology resident identified		Respiratory Therapy for pulm. eval. and teaching, Vascular, Pulmonary, Anesthesia, SWS and CHN PRN			
ACTIVITY			Ward privileges	BR until 8 hours after sheath d/c'd.	Pre-existing level up ad lib, ward privileges	Bedrest, turn q2hrs. Passive ROM.		OOB 1 hr. after extub. & TID, amb. X1 if H/D stable. (Demonstrates sternal precautions)
DIET			Pre-hospital diet (e.g. CPD, ADA) Npo after 2-400 hrs.	Resume diet. Force fluids.	Cardiac Prudent or other prescribed diet	NPO, NG tube to low intermittent suction		NPO x 6 hr. after extubation then clear liquids; Fluid limit ____ until pre-op wt. reached, D/C NG tube (Tolerates clear liquids)
TREATMENT			Shave prep	Close observation of both groins. puncture site. Betadine shower.	Pre-op wt hr. H/tickens shower X2, PM and AM pre-op. supervised use of IS	Weight, VS q 15 min X4, q1 2 X2, then VS q1 hr X 24 hr. IHD parameters q1 hr til stable. Continuous EKG monitoring. Foley catheter, I&O q1 hr, External pacer. chest tubes to 20 cm suction. TED hose care q shift.		Extubate VS q 4h X 48hr if on ward or VS q2 in ICU. Weight. External pacer d/c'd, TED hose care q's, change sternal and leg dressing-cleanse with betadine apply DSD. Remove chest tubes. A-line, cordis, foley, IS& C&DB q2hr. continuous cardiac monitoring.
EDUCATION/DIS CHARGE PLANNING			Video booklet on cardiac cath. Consent signed. Advanced directives. Review nursing care pre/post cath.	Review s/s to report. Review meds and activity.	Respiratory Therapy instruction on IS, C&DB. Tour of ICU, pre-op video. Ensure has copy of education booklets (2). Initiate Plan of Care for Adult OHS. Consent signed	Family support, ICU visiting policy. Initiate ICU teaching plan.		Reinforce respiratory care instruction; incision splinting Active ROM. Con't teaching plan. (Demonstrates proper splinting and C&DB)
MEDICATIONS			Heparin lock. Continue patient's own meds.	IV fluids. Pre-med for known dye allergy.	Pre-op sleeping med. Antibiotics IVPB, D/C IV Heparin. Continue pns. own meds. Pre-op sleeper.	MS IVP for pain; Versed for agitation. ICU IV drugs, ASA, Ancef X 48 hrs. O2 per ventilator. Vasopressors □ Dopamine □ Dobutamine □ Epinephrine □ Amrinone Vasodilators □ Nipride □ TNG □ Esmolol		Heparin lock IV. Resume ECASA qd. PO pain meds. (Pain meds effective) Off vasoactive drips if on W/d 46. O2 4LPM, wean to 2LPM. Toradol IVPB X 3 days. Propanolol. Laxatives.
EVALUATION			Did patient's progress correspond to the critical pathway?					

	Date	Date	Date	Date
	HD /POD2 ICU/WD 46	HD /POD3 wd 46	HD /POD4 WD 46	HD /POD5 WD 46
TESTS	CXR, EKG, CBC, P 1-3, I&G,	CXR, EKG, CBC, P 1-3, I&G,	CXR, EKG, CBC, P 1-3 w/ I&G	
CONSULTS	SWS, CHIN, etc.	OT/PT as appropriate. E-mail consult to Cardiology resident.	Nutrition Care as appropriate.	
ACTIVITY	Progressive ambulation OOB in room at least TID, Amb. in hall, assisted care.	Ambulate length of Ward 46 with increased frequency, assisted care.	Assisted care, remain on ward until wires/telemetry dc'd	Ambulate around CT Service core TID. Self care/may shower
DIET	Cardiac Prudent or other diet Fluid limit _____ cc in 24 hrs. (Tolerates cardiac prudent diet)	con't	con't	Continue fluid restriction until DOS wt. met
TREATMENTS	Incision & TED hose care qs, telemetry. I&O, IS & C&DB q1-2h W.A. Pulse oximetry con't with VS. Weight.	Weight, incision care, telemetry. I&O, IS & C&DB, pulse oximeter with VS until off O2 N 48 hrs. VS q 8 hrs. when out of ICU N 48 hrs.	D/C q2h IS, continue CDB q 2-4hrs. W.A. Telemetry. Weight.	D/c pacing wires, telemetry and IIL. TED hose & incision care, I&O. Change wt. to Mon/Thurs when DOS wt. met. (BN prior to discharge) (Stable cardiac rhythm) (Wound clean, dry and well approximated)
EDUCATION DISCHARGE PLANNING	Monitor use of IS, C&DB, proper body mechanics when moving in bed, etc. Fluid restriction, I&O importance. Continue teaching plan until discharge.	Continue plan. Review contents of 2 patient education pamphlets. Observe coping with surgery. (Demonstrates appropriate coping)	View discharge film with family. S.O. Wound care, activity, sexual activity, coping, med instruction. Diet class during hospitalization. (D C plan adequate).	One on one patient education on discharge needs, wound care, etc. (Pt. demonstrates basic understanding of plan items)
MEDICATION	Wean O2 to RA with >93% O2 sat. ECASA qd. Percocet Toradol. Surfact/Metamucil. propanolol, Tylenol, MOM, Restoril. Carafate.	Change heparin lock site. Continue to wean O2. IVPB Toradol dc'd.	Continue meds (On room air)	Order discharge medications.
EVALUATION	Did patient's progress correspond to critical pathway?			

	Date	Date	Date	Date
	HD /POD WD 46	HD /POD WD 46	HD8 /POD 6 WD 46	Discharge
TESTS				One week follow-up phone call
CONSULTS				Appointments made prior to discharge.
ACTIVITY				Follow-up appointments with Cardiothoracic Service in 2 wks & Cardiology service in 1 month.
DIET				Con't with increase in activity; (able to do ADL's without assistance or with minimal assistance by care giver.)
TREATMENTS				Con't
EDUCATION/ DISCHARGE PLANNING				Incision care, D/C any remaining sutures.
MEDICATIONS				Education and patient satisfaction survey completed by pt. Specific d/c instructions. Med. instructions. (Pt. has transportation home with care giver available 24 hrs/day X 1 week)
EVALUATION				Order and pick up discharge medications.
				Follow up phone call to check progress. (Safe and adequate recovery at home)

Surgeon(s):

Intern:

Path initiated by:

CRITICAL PATH: CABG/VALVE

Case Manager \_\_\_\_\_

Expected LOS: 12.9 days      Actual LOS: \_\_\_\_\_ days

Date	IID# 1 & 2	IID # 3	IID# 4	IID# 5	IID# 6	IID# 7	IID# 8
Describe variance from clinical path							
Determine area of concern	<input type="checkbox"/> Diagnostics <input type="checkbox"/> Tx/Meds <input type="checkbox"/> Nutrition <input type="checkbox"/> Activity <input type="checkbox"/> Consults <input type="checkbox"/> Ed/DP	<input type="checkbox"/> Diagnostics <input type="checkbox"/> Tx/Meds <input type="checkbox"/> Nutrition <input type="checkbox"/> Activity <input type="checkbox"/> Consults <input type="checkbox"/> Ed/DP	<input type="checkbox"/> Diagnostics <input type="checkbox"/> Tx/Meds <input type="checkbox"/> Nutrition <input type="checkbox"/> Activity <input type="checkbox"/> Consults <input type="checkbox"/> Ed/DP	<input type="checkbox"/> Diagnostics <input type="checkbox"/> Tx/Meds <input type="checkbox"/> Nutrition <input type="checkbox"/> Activity <input type="checkbox"/> Consults <input type="checkbox"/> Ed/DP	<input type="checkbox"/> Diagnostics <input type="checkbox"/> Tx/Meds <input type="checkbox"/> Nutrition <input type="checkbox"/> Activity <input type="checkbox"/> Consults <input type="checkbox"/> Ed/DP	<input type="checkbox"/> Diagnostics <input type="checkbox"/> Tx/Meds <input type="checkbox"/> Nutrition <input type="checkbox"/> Activity <input type="checkbox"/> Consults <input type="checkbox"/> Ed/DP	<input type="checkbox"/> Diagnostics <input type="checkbox"/> Tx/Meds <input type="checkbox"/> Nutrition <input type="checkbox"/> Activity <input type="checkbox"/> Consults <input type="checkbox"/> Ed/DP
Analyze Source of variance	<input type="checkbox"/> System <input type="checkbox"/> Practitioner <input type="checkbox"/> Physiologic (patient)	<input type="checkbox"/> System <input type="checkbox"/> Practitioner <input type="checkbox"/> Physiologic (patient)	<input type="checkbox"/> System <input type="checkbox"/> Practitioner <input type="checkbox"/> Physiologic (patient)	<input type="checkbox"/> System <input type="checkbox"/> Practitioner <input type="checkbox"/> Physiologic (patient)	<input type="checkbox"/> System <input type="checkbox"/> Practitioner <input type="checkbox"/> Physiologic (patient)	<input type="checkbox"/> System <input type="checkbox"/> Practitioner <input type="checkbox"/> Physiologic (patient)	<input type="checkbox"/> System <input type="checkbox"/> Practitioner <input type="checkbox"/> Physiologic (patient)
Action Taken							
RN initials	Day Eve Night	Day Eve Night	Day Eve Night	Day Eve Night	Day Eve Night	Day Eve Night	Day Eve Night
MD signature							



## Appendix 7

### Marketing Audit for Walter Reed's Cardiothoracic Surgery Service.

## MARKETING AUDIT

Walter Reed's CT staff expressed consensus during the preliminary interviews that referrals could be expanded by establishing stronger relationships with physicians at other MTFs and stimulating interest for WRAMC's CT service. To do this would likely consume a significant amount of resources, either through lost man-hours or direct expenditures. Colonel Moritz indicated that the service was willing to invest its time and money in proportion to the potential pay-off.

An initial examination of the RCMAS2 data indicated that within a 200 mile radius, the potential catchment areas of interest for marketing WRAMC's CT services included Naval Medical Center Portsmouth (with Langley Air Force Base and Fort Eustis), Walson Air Force Hospital at McGuire Air Force Base, the 436th Medical Group at Dover Air Force Base, Kenner Army Community Hospital, and Dewitt Army Community Hospital at Ft. Belvoir. A closer examination of the RCMAS and CHAMPUS data indicated that Dover and Dewitt were not at this time viable targets. Dover was dropped because two of the cases fell outside of the catchment area and prior year data showed only four CABGs performed through CHAMPUS. During the research into the CHAMPUS procedures within Dewitt's catchment area, most of the non-availability statements were from NNMC for patients treated through a CHAMPUS partnership with Virginia Heart and Surgical Specialists. It was evident that the primary targets of opportunity for capturing CT procedures were in southeastern Virginia area where there were over 140 CHAMPUS CT procedures in FY94.

### Internal Audit

The internal audit examined patient satisfaction, workload capacity, leadership support, and the working relationships with NNMC and Malcolm Grow Air Force Hospital. Patient interviews and the findings of Walter Reed's patient satisfaction survey provided an indication as to how well the organization has been able to satisfy the consumers' needs, wants, and desires. Using the critical path for CABGs as a reference, CT workload capacity was measured by determining which services support CT care and what capabilities and limitations existed within the system to support the present and potential increased demand. Discussions with the support and command structure within the hospital were used to ascertain if the administration and leadership were willing to support Colonel Moritz's attempt to increase the number of CT procedures. As a final step, the present working relationships with the other military medical centers in the NCA were examined in an attempt to identify if there were problems that affected patient referrals.

In examining the findings of Walter Reed's 1995 patient satisfaction survey, and discussing the results with the Laurel Meaney, WRAMC's Patient Representative, patients were generally pleased with the care they received but were dissatisfied with parking, lodging, the appointment system, and the manner in which they were treated by clerical staff. Before the survey was given to the CT patients, Dr. Moritz stated that the satisfaction scores were likely to be greater because CT patients and their families receive a higher level of care and support from the CT physicians and staff. In comparing the two sets of results, the higher scores on the CT patient surveys supported Colonel Moritz's assumptions. Figure 4 shows the results of this comparison.

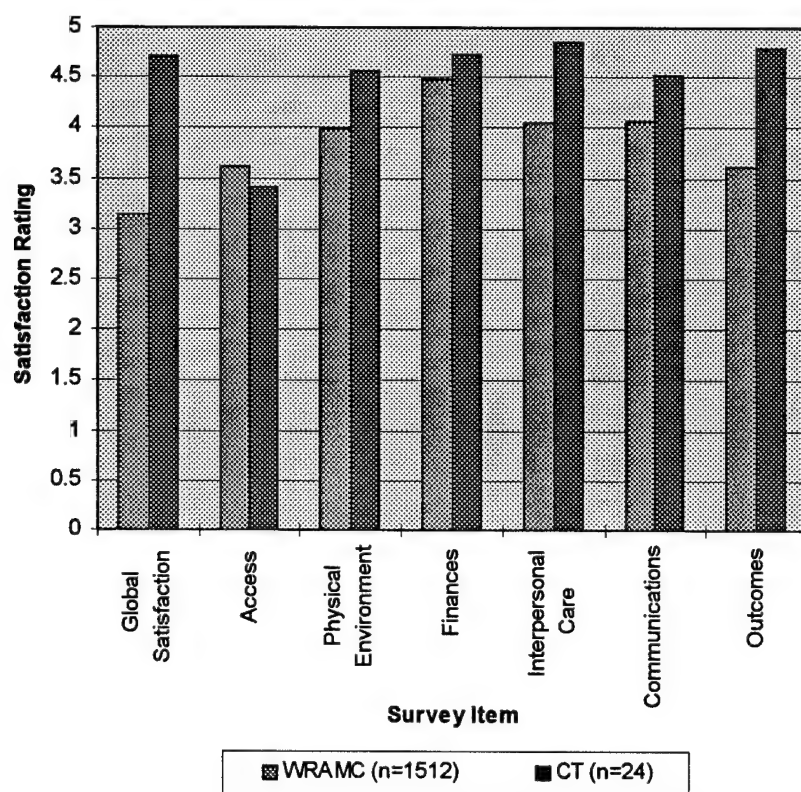


Fig. 4. CT patient satisfaction as compared to WRAMC patient satisfaction. Satisfaction scale: 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent.

As indicated above, CT patients were pleased with the care rendered by the physicians and support staff. Beneficiaries were less satisfied with parking, lodging, appointment scheduling, and the attitudes demonstrated by clerical staff. The survey results were supported by the comments section at the end of the survey. The two things patients liked most about Walter Reed were the quality of the staff and the concern shown by the medical staff towards patients and family members. The two things that patients thought needed improving were parking and appointment scheduling.

Following the critical path for coronary artery bypass grafts, the areas within Walter Reed which would need to support an increase in cardiothoracic procedures are: Lab Services, Cardiology, Radiology, Respiratory Therapy, Anesthesia, Vascular Services,

Pharmacy, Dietetics, Social Work, the OR, the Surgical Intensive Care Unit (SICU), the Coronary Step-down Unit, and Occupational/Physical Therapy. Of these thirteen areas, Cardiology, Vascular Services, the OR, and the SICU would be the only sections to experience a significant impact (Mize 1996, Amendolair 1996).

The Cardiology and Vascular Services would need to provide consultation and work-ups, primarily cardiac catheterizations, for some of the additional CT procedures. Colonel Clarence Pearson, Chief of Cardiology, stated that the increased workload would be beneficial to his service since the number of cardiac catheterizations performed at Walter Reed had declined within the last four years (PASBA2 1995). Currently, cardiology is performing approximately 1,700 catheterizations per year and has the capacity to comfortably expand to 1,800 cases per year (Fissel 1995). This sentiment supporting the value of new workload was echoed by Walter Reed's Vascular Service. Dr. Edward Gomez, vascular surgeon, indicated that additional workload would be useful in the training of Walter Reed's two vascular fellows.

In order to support additional CT cases, the operating rooms and the SICU would need additional resources. At the present time, the OR is suffering a shortage of OR nurses and technicians. Colonel Amendolair, Walter Reed's OR Nursing Supervisor, has presented a request for approximately \$453,500 for the remainder of fiscal year 1996 to procure the additional staff needed to maintain 13 fully functional operating rooms. In her past assignment as the OR Supervisor at Eisenhower Army Medical Center, Colonel Amendolair experienced a similar ramping up of OR services for CT surgery. She estimated that WRAMC's OR would need an additional 1.25 nurse FTEs, 1.25 OR tech FTEs, and approximately \$250,000 in supplies and equipment<sup>1</sup> to support an increase of 100 CT cases per year. She stated that the time required to train the additional personnel to the point where they could work without supervision was six months. Marisa Mize, the

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<sup>1</sup> Primarily another heart-lung pump.

Director of Cardiovascular Intensive Care Nursing, indicated that the SICU would need two more ICU nurse FTEs. The total estimated cost for these personnel, supplies, and equipment was approximately \$700,000 (Amendolair 1996).

The attempt to increase CT procedures at Walter Reed is supported by both the Chief of the Department of Surgery and the Deputy Commander of Clinical Services. Currently there is an effort underway to get the CT Service recognized as a Multi-regional Specialized Treatment Service (STS), supporting TRICARE Regions 1 and 2. In addition, the Department of Pediatrics is aggressively attempting to reduce pediatric cardiovascular CHAMPUS costs within the North Atlantic Health Service Support Area through a CHAMPUS recapture program. In regards to marketing the CT Service, and WRAMC as a whole, there is a belief among the hospital staff that the focal point for promoting Walter Reed needs to be the primary and secondary care providers at the outlying hospitals. A contradiction found during the audit centered on the mission of the hospital's recently hired Director for Marketing Services. Her present directive is to educate the hospital's staff and beneficiaries about TRICARE and how its implementation may affect the delivery of care. With many of the services looking to increase referrals, it would appear that the hospital is under-utilizing a resource.

The referral system for CT care between the Army, Navy, and Air Force hospitals within the NCA is in disharmony. Communication between the programs is encumbered by conflicting command priorities. For example, while WRAMC is attempting to increase referrals, Malcolm Grow has issued patients a letter directing them to look for care at some place other than Malcolm Grow (Appendix 9). These patients could have been directly referred to WRAMC or NNMC. This problem recently surfaced when a patient, who had received a catheterization and was diagnosed as needing a CABG by the Cardiology Service at Malcolm Grow, was told to look elsewhere for care. The patient

self-referred to Walter Reed and was operated on two days later. Colonel Moritz stated that he was deeply troubled by this situation and felt that the hospital commanders needed to become involved in the matter.

The working relationship between the CT services at WRAMC and NNMC is in the process of transitioning from a period of conflict to cooperation. In the past, policy differences between WRAMC and NNMC have been, for a lack of a better term, political in nature. After the nation wide attention NNMC suffered from the controversy surrounding the Dr. Billig case, NNMC entered into a CHAMPUS partnership agreement with Virginia Heart and Surgical Specialists. The hospital currently has three military CT surgeons who assist the Virginia Heart CT surgeons. The partnership agreement is in the process of being terminated and will be replaced with a contract. Dr. Moritz advocates the termination of all external agreements and the development of a closer alliance between the two programs. In his opinion, Walter Reed could support NNMC in the vast majority of the cases which are currently being performed by the Virginia Heart surgeons in NNMC's operating rooms. Captain Zeck, the Chief of NNMC's CT Service, agrees that the Virginia Heart surgeons need to have less control over NNMC's CT program (Zeck 1996).

The CT programs at NNMC and WRAMC are being drawn together in part because of TRICARE. In FY94, 40% of the 183 CT procedures performed at NNMC were referred from Naval Medical Center Portsmouth (NMCP) (Zeck 1996). With NMCP being the only military hospital to provide cardiology care in the Tidewater region of southern Virginia, it is the focal point for gaining or losing CHAMPUS market share. Dr. Zeck is working with Dr. Moritz to promote a joint NNMC-WRAMC CT multi-region STS that will ensure NNMC continues to have access to this referral base after TRICARE is activated in Region 2. Since NNMC's CT Service is limited in its capacity

to expand its workload by 50 cases per year<sup>2</sup>, WRAMC would gain all of the pediatric CT cases and any additional referrals beyond NNMC's 50 (Zeck 1996). The new alliance between NNMC and WRAMC may prove to be the key element which allows WRAMC to penetrate into the Tidewater CT market.

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<sup>2</sup> NNMC does not support CT care for infants and children, therefore all pediatric CT cases referred to the NCA would be conducted at WRAMC. Current SICU capacity and OR availability restrict NNMC's CT expansion to 50 cases (Zeck 1996).



## External Audit

### **Walson Air Force Hospital, McGuire AFB, New Jersey**

Walson Hospital furnishes primary and secondary care to a population of 77,067 eligible beneficiaries within its catchment area. Of this total, 27,240 individuals are active duty service members and their dependents. In excess of 15,000 members of the beneficiary population are over age 65 (DMIS 1995). The facility provides ambulatory same-day surgery on-site, and, for those patients requiring more extensive care by Walson's staff, hospitalization at Memorial Hospital of Burlington County<sup>3</sup>. The services at Walson which could refer patients to Walter Reed for cardiovascular care are: Family Practice, Flight Medicine, Surgery, Pediatrics, and Primary Care. In fiscal year 1994 there were 19 CHAMPUS CT procedures performed within the hospital's catchment area.

Active duty service members are referred to either Walter Reed or National Naval Medical Center. All other beneficiaries requiring cardiovascular care are given a non-availability statement and referred to Deborah Heart and Lung Center, unless they express a preference to go to WRAMC or NNMCC. Patients who receive referrals to WRAMC make their appointment from Walson in the Health Benefits Office. The head of the Health Benefits Office, Airman First Class Bush, indicated that patients and their family members were generally pleased with the care received at Walter Reed. One problem he did note was the difficulty some beneficiaries encountered in getting lodging before they arrived at Walter Reed. According to Airman Bush, family members cannot make lodging reservations in advance but must arrive at WRAMC and attempt to get a room in the Guest House. If nothing is available they will then be given a list of hotels where they can get a room.

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<sup>3</sup> This is accomplished through an external partnership agreement in which Walson's military physicians are privileged and credentialed to treat military beneficiaries.

The primary competitor for cardiovascular care in this market is Deborah Heart and Lung Center and its associated physicians. The center is located in Browns Mills, New Jersey, less than 10 miles away from Walson. Deborah is a not-for-profit specialty care center that is affiliated with Memorial Hospital of Burlington County and supports a number of cardiovascular residency programs. In 1994, Deborah had an average daily census of 127 occupied beds for its 155 staffed beds, an 82% occupancy rate (American Hospital Association 1995).

Within this market, the decision of where to send a patient is controlled by the physicians, and is based on their experience with the performance of the military facilities in the NCA and Deborah Heart and Lung Center. During the interviews, the physicians at Walson made it very clear that they were pleased with the cardiovascular care that patients receive at Deborah. They noted that the civilian providers were enthusiastic about supporting military beneficiaries and, in most circumstances, were willing to accept only the CHAMPUS payment. The medical staff also indicated that the level of professional support and respect given to them from the local providers was superior to that they had received from either WRAMC or NNMC. Colonel Denison, the Chief of Family Practice at Walson, voiced a frustration that was echoed by other members of the medical staff when he stated that,

“When we send a patient out on CHAMPUS, we get a call back and a timely patient evaluation from the physician’s office. When we send a patient to you, we don’t even find out if the patient was seen.”

He went on to indicate that if Walter Reed could improve its performance in supporting the physicians at Walson, the CT service was likely to get fifteen to twenty referrals per year.

Of the 28 beneficiaries interviewed, 13 were active duty service members, 6 were dependents of active duty service members, and 9 were retirees or dependents of retirees.

The areas of concerns during the interviews fell into three general categories: travel concerns, quality of care, and past experience or reputation. Of the 13 beneficiaries that expressed their opinion regarding WRAMC, all were unanimous in their opinion that Walter Reed provided quality care, with five individuals having first hand experience either for themselves or a family member. Seventeen of the nineteen active duty and dependents indicated that the travel time and distance were strong disincentives for getting care at Walter Reed. One of the service members and one of the dependents stated that the cost savings far outweighed the travel problems.

Retirees provided the majority of the comments during the interviews. Most were positive in expressing the trust they felt about receiving care at Walter Reed. One retiree went so far as to say that travel distance was irrelevant in his determination as to where he would prefer to receive care for himself or his wife. For this individual, simply gaining access into the Walter Reed System was what he believed to be the primary concern for most retirees.

In summary, WRAMC should look to other markets before attempting to gain referrals from Walson. Deborah is a strong competitor that is unlikely to yield any of its cases to WRAMC. The military providers at Walson are not supportive of WRAMC's efforts and are likely to continue their practice of referring patients to Deborah.

## **Naval Medical Center Portsmouth, Portsmouth Virginia**

Naval Medical Center Portsmouth is the Lead Agent for TRICARE Region 2 and one of three Navy teaching facilities. NMCP provides primary, secondary, and tertiary care medical care to a beneficiary population of over 300,000 active duty, retirees, and dependents (DMIS 1995). The facility is the tertiary care referral center for the military hospitals in southern Virginia and the Carolinas. In 1994, the hospital provided over 1,750,000 outpatient visits and had an average daily census of 238 patients for 360 staffed beds (NMCP Home Page 1996). NMCP has 13 residency programs and a staff of 3,900 physicians, nurses, and support personnel. The cardiovascular services at the hospital include adult cardiology, pediatric cardiology, and vascular surgery. In FY94, WRAMC's CT service received one referral from Portsmouth for a patient requiring a CABG.

The referral points to CT care are the Adult and Pediatric Cardiology Services, Vascular Surgery, and the General Surgery Clinic. Portsmouth has five adult cardiologists, two pediatric cardiologists, and one vascular surgeon. Patients who present in the ER and require immediate bypass surgery are sent to Norfolk General Hospital. For non-emergent CT surgery, military personnel are referred to NNMC (as a first choice) or WRAMC. Because active duty military typically are younger and in better physical condition than others who may require CT surgery, their cases are highly sought after due to the low morbidity and mortality potential. Portsmouth's cardiologists were candid about their desire to send these cases to NNMC to support the Navy's CT program. CHAMPUS beneficiaries are given the option to either go out on CHAMPUS or travel to NNMC or WRAMC. The pediatric cardiologists voiced a willingness to consider sending patients to WRAMC in hopes of establishing a CHAMPUS recapture initiative that would bring additional funding into their clinic.

The decision making process in this market is based on patient-provider agreement. The physicians are willing to send a CHAMPUS eligible beneficiary to the NCA if that is what the patient desires. Without a means of communicating the capabilities of WRAMC's CT program, such as a pamphlet, it is difficult for NMCP's cardiologists to promote services in the NCA to patients. Captain Zeck, from NNMC, stated that the development of this type of promotional device will be critical in supporting the mult-regional STS.

Patients were non-committal about being referred to Walter Reed. Of the 22 patients interviewed in the cardiology clinic, 5 were active duty, 15 were CHAMPUS eligible beneficiaries, and 2 were Medicare eligible. Eighteen expressed some concern about traveling to Walter Reed for CT care. Countering these concerns, 11 of the beneficiaries indicated that the cost avoidance associated with being treated at a military hospital was a factor which might influence their decision to accepting a referral to WRAMC. Two of the patients voiced a positive opinion about the quality of patient care rendered at Walter Reed. There were no negative comments about WRAMC during the patient interviews.

There are two civilian competitors in this market, Sentara Norfolk General Hospital, a 661 bed academic medical center, and Children's Hospital of the King's Daughters, a 166 bed facility. Other than the house staffs, both of these hospitals are supported by the same cardiovascular group practices in the Tidewater region. Neither of these hospitals has the same level of market domination as shown by Deborah in New Jersey. Both of the hospitals advertise in *The Flagship*, the local Navy newspaper. Children's Hospital has initiated a call-in information service, Children's Health Line, which was advertised in the February 1996 edition of *The Flagship*. The cardiologists at NMCP indicated that they

were pleased with the patient care rendered by the civilian providers, but they also voiced a desire to reduce the number of cases being sent out on CHAMPUS.

The potential for WRAMC gaining additional referrals from Portsmouth is moderate. While the Commander, Rear Admiral Rawley, is interested in reducing CHAMPUS expenditures, the cardiologists appear to be willing to continue with the status quo. IF WRAMC's CT Service were to actively promote itself to the physicians and patients, it could get 10 to 15 additional referrals per year. This estimation is based on a total market of 129 CHAMPUS cases (FY94 data), 77 or 60% were non acute. Of the 77 possible cases, 55% are likely to remain CHAMPUS referrals<sup>4</sup>, 30% referred to NNMC, and the remaining 15% or 12 cases (those which cannot be performed at NNMC)referred to WRAMC. Without a means of communicating the value of receiving CT care at WRAMC, referrals from NMCP are likely to remain in the range of 1 to 3 cases per year. If WRAMC cannot penetrate into the market before the TRICARE contract is in place in Region 2, Walter Reed is likely to find itself locked out of the market.

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<sup>4</sup> This percentage was based on estimations provided by NMCP's cardiologists and the findings of the beneficiary interviews.

### **McDonald Army Community Hospital, Fort Eustis Virginia**

McDonald Army Community Hospital provides primary and secondary care to over 48,000 beneficiaries. The hospital is closely tied to NMCP, with the two MTFs having overlapping catchment areas. Lieutenant Colonel Stabler, the Deputy Commander for Clinical Services, remarked that within the last year, Portsmouth appeared to be stepping up its efforts to provide better support to the patients and staff at McDonald. This opinion was also voiced by the Chief of the Surgery Clinic, Major Mayer, and both of the hospital's internists, Captains Mann and Horwat. There were a few positive comments by the physicians regarding WRAMC, particularly the support provided by Walter Reed's Urology Service and the 1-800 physician-to-physician phone line. The negative comments were blunt, with one provider stating, "It's easier to get into Portsmouth than to flog myself trying to get a patient admitted into Walter Reed". The physicians also noted that they rarely received narrative summaries or callbacks on patients that were referred to WRAMC. A pediatrician noted, "They (WRAMC physicians) seem to forget that there's someone on the other end of the consult, and we need to know what's going on with our patients".

Of the 24 beneficiaries interviewed, 8 were active duty, 7 were retirees, and 9 were dependents. Travel concerns were noted by 10 individuals, primarily family members, as being a disincentive for being referred to WRAMC. Thirteen of the beneficiaries indicated that Walter Reed they had received care or knew someone who had received care at WRAMC. All of the 13 stated that they believed WRAMC provided quality care and they were willing to be referred to the hospital in the event they required tertiary care. Two individuals, both retirees, indicated that cost savings was an incentive for being referred to WRAMC and outweighed any concern they had about travel time or distance. From the

interviews, active duty and retired Army personnel appear to have maintained a strong sense of loyalty to Army hospitals.

The decision making process for referrals initially begins with the physicians. If a provider can get a patient into Portsmouth, the process ends at this point. If a provider needs to send a patient out on CHAMPUS and the patient requests a referral to WRAMC, then the providers will accede to the individuals request and will work with the patient to get them an appointment. The current decision process for CT referrals appears to have been created because McDonald's providers find it easier to work with NMCP or civilian cardiologists. One of the surgeons, who was interested in promoting CT's attempt to increase referrals, suggested that the service should work with the Region 2 TRICARE Office to force the local civilian cardiologists to refer non-emergent CT cases to Walter Reed. This concept is appealing because it allows the CT Service to gain addition workload while still providing CHAMPUS patients with a local source for their cardiac care.

In examining McDonald's market, it became clear that the facility and its staff are becoming a sub-set of NMPC's market. With many of Fort Eustis's cardiac patients being referred to Portsmouth, Sentara Norfolk General Hospital and Children's Hospital of the King's Daughters are the primary competitors to WRAMC's CT Service for McDonald's beneficiaries. Any CT marketing effort in this area needs to be focused primarily at NMPC and the two hospitals should be considered to be a single market sector.



### **Dewitt Army Community Hospital, Fort Belvoir Virginia**

Dewitt furnishes primary, secondary, and some tertiary care to a population of 123,620 eligible beneficiaries within its catchment area (DMIS 1995). The services at DACH which could refer patients to Walter Reed for cardiovascular care are: Family Practice, Pediatrics, Primary Care, and Cardiology<sup>5</sup>.

When a patient is seen at Dewitt and deemed to require cardiovascular care, he is provided a consultation slip and referred to one of the health care finders. The finder or advisor then attempts to schedule an appointment for the patient at either WRAMC or NNMC. In fiscal year 1994 there were 22 CHAMPUS CT procedures performed within the hospital's catchment area. Upon further investigation, 16 of these patients were referred out on CHAMPUS by NNMC to Virginia Heart Specialists. Of the remaining six, four were seen by CHAMPUS providers on an emergency basis. Within the last year, the CT service at NNMC, under the guidance of Dr. Zeck, has attempted to reduce the number of patients referred out on CHAMPUS. Recognizing that this market does not contain the base line of 10 CT cases, the audit for Dewitt was terminated at this point.

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<sup>5</sup> This service is provide to DACH through WRAMC's cardiology service.

### **Kenner Army Community Hospital, Fort Lee Virginia**

Kenner Army Community Hospital provides primary, secondary, and limited tertiary care to 37,258 beneficiaries (DMIS 1995). The hospital is undergoing a \$16 million renovation, while at the same time preparing to downsize to "Super Clinic" status<sup>6</sup>. According to Captain Sauer, the Chief of the hospital's Clinical Support Division, the change from hospital to clinic status will have only a minimal impact on the organization's health care capabilities. In the past year, Kenner has had a daily census ranging from 4 to 10 occupied beds (Sauer 1996). Patients who require higher levels of care are referred to WRAMC, NMCP, or Southside General Hospital in Petersburg Virginia. Kenner operates a daily shuttle to WRAMC and referred two CT cases to the CT Service in FY94.

Kenner has two internal medicine specialists who provide all the in-house cardiovascular care. The facility is supported by a cardiac echo lab and the medical staff hopes that the lab will be expanded to allow for cardiac stress echo capability. During the interviews with the medical staff, there was consensus regarding the need for an on-site cardiologist. Lacking a cardiologist, the Surgery Clinic is the only direct referral source for CT surgical care. Patients with cardiovascular problems are either managed by the internists or referred out to a military or civilian cardiologist. The medical services which make these referrals are the ER, the pediatric clinic, the outpatient clinic, and internal medicine. Patients seen in the ER and deemed to have a life threatening illness are sent to Southside General Hospital. Active duty military who are seen in the clinics are referred to cardiology at either Portsmouth or WRAMC. CT care for military personnel is then provided by WRAMC or NNMC. Patients seen in the pediatric clinic are referred to (1) Portsmouth, (2) WRAMC, or (3) Virginia Heart Specialists. As stated above typically pediatric patients who are seen at Portsmouth and require CT surgery are sent out on CHAMPUS.

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<sup>6</sup> This is a result of the 1994 Base Realignment and Closure actions.

The staff in Kenner's outpatient clinic indicated that appointment wait times for the internal medicine clinic and the cardiology clinics at WRAMC and Portsmouth were unacceptable, therefore the CHAMPUS eligible patients were provided with a statement of non-availability and sent to Virginia Heart. Once a patient is referred to a cardiologist at Virginia Heart, any CT procedure is more than likely to be performed by one of the CT surgeons within the group.

Virginia Heart and Surgical Specialists are the primary competitors in this market, providing cardiovascular care at Southside General Hospital and Hopewell Hospital. Virtually all of the CHAMPUS eligible patients who present with significant cardiovascular problems are referred out to this group. Three of physicians in the primary care clinic indicated that Virginia Heart provides excellent care, usually seeing a patient the same or next day of referral. Along with quality care, all of the physicians who discussed Virginia Heart stated that the group provided timely feedback about the diagnosis and treatment path.

The physicians are the decision makers in the process at Kenner. The entry point into the system for the majority of the patients, the outpatient clinic, has been "lost" to Virginia Heart due to the long waiting periods for cardiology appointments at WRAMC, Portsmouth, and NNMC. Major Gutheim, the head of internal medicine at Kenner, indicated that his first choice for referral is WRAMC, but he has found it difficult to get his patients into Walter Reed's cardiology clinic. As a result, Dr. Gutheim refers most of his patients who are likely to require bypass surgery to Virginia Heart.

Twenty six patients were interviewed in the pharmacy and primary care clinic waiting area, 7 active duty service members, 11 retirees, and 8 family members. The responses from the interviews indicate that WRAMC is well regarded for providing quality care, with 12 positive comments and only one negative remark. Because Kenner operates

a shuttle to WRAMC, travel time or distance to WRAMC was not a concern. Two patients did initially discuss travel as an issue, but neither knew about the shuttle.

Once again, the primary concern for retirees was access, with three of the retirees voicing a frustration that they felt they were going to be excluded from the system in the near future. One of the retirees had been receiving care at WRAMC for 11 years and noted that his service in the military was not forgotten by the providers at military hospitals. "I'm addressed as Sergeant Major at Walter Reed," he stated, "at Southside I'm just another patient without a connection to the hospital or the doctors."

Six of the active duty respondents were relatively indifferent about going to WRAMC or a local civilian facility, with one of the six soldiers stating, "We go where they tell us to go and most of the time they take good care of us." The one soldier<sup>7</sup> who was more opinionated in his desire to stay in the military system indicated that he would feel more comfortable receiving extensive care in a military hospital because he understands the system and would feel alone or out of place in a civilian hospital.

This market has the greatest potential for quick entry and rapid share growth. If Walter Reed can send a cardiologist to Kenner on a routine basis, there is a strong possibility that all but the emergent CT patients can be recaptured from the civilian market. Another possibility for recapturing these cases is through cooperative agreements with the local civilian cardiologists. By reassuring the cardiologists that they would maintain control of the patients before and after the patients' surgery, WRAMC's CT Service may be able to enter into a win-win situation with the local providers. Although the number of CT cases in this market is small compared to Portsmouth, the total number of referrals to WRAMC from Kenner is likely to be the same.

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<sup>7</sup> A staff sergeant with 11 years of active duty service time.

## External Market Audit Summary

Of the five markets initially examined, there are four markets that warrant consideration by Walter Reed's CT Service. The external audit findings are summarized in table 1.

		Walson (McGuire)	Kenner (FT Lee)	NMCP	McDonald (FT Eustis)
Providers interviewed		15	8	9	8
Physician opinion regarding WRAMC's attempt to gain referrals	Positive	1	6	3	1
	Neutral	2	2	6	6
	Negative	12			1
Physician opinion regarding civilian competitors	Positive	11	1	2	3
	Neutral	4	7	5	5
	Negative			2	
Patients interviewed		28	26	22	24
Patient Opinion regarding WRAMC	Positive	13	12	2	13
	Neutral	15	13	20	11
	Negative		1		
Patient Opinion regarding civilian competitors	Positive	4	3	5	2
	Neutral	23	23	14	22
	Negative	1		3	
Patient Opinion regarding travel	Positive	2	24		2
	Neutral	9		4	12
	Negative	17	2	18	10

Table 1. Findings from the interviews at Ft. Lee, McGuire AFB, NMCP, and Ft. Eustis.

The market supported by Walson Air Force Hospital will be difficult to penetrate because of the strong relationships between the military providers and Deborah Hospital. Fort Lee's market has strong potential if (1) WRAMC can support Kenner with a cardiologist or (2) the CT Service can work with the civilian cardiologists in the local community. The Tidewater area (Fort Eustis and NMCP) has the greatest concentration of beneficiaries and CHAMPUS referrals. Penetration into this market will be contingent upon WRAMC's ability to promote its CT service to the Tidewater beneficiaries and NMCP's cardiologists.

## Appendix 8

Columbia-Presbyterian Heart Institute's Home Page from the World Wide Web.



## An Exceptional Resource for Physicians

The Columbia-Presbyterian Heart Institute comprises all of the Presbyterian Hospital's and Babies Hospital's extensive pediatric and adult cardiology and cardiac surgery services, as well as the preeminent cardiovascular research and teaching facilities of the Columbia University College of Physicians & Surgeons.

The Heart Institute is uniquely able to offer referring physicians and their patients exceptional service in routine or complex cardiac care. Physicians can take advantage of the Institute's resources by calling the Cardiac Outreach Program (1-800-5-HEART-2) at any time, around the clock.

### Referral Forms

Offering unique services to physicians, as well as the finest patient care for even the most complex and difficult cases, the Columbia-Presbyterian Heart Institute has been designed as the referral center of choice in the metropolitan New York area.

The Institute offers the region's most comprehensive array of cardiac services. Some of them, such as the Pediatric Lipid Center and the Specialized Center for Research in Atherosclerosis (SCOR-A), are unavailable elsewhere.

At the Heart Institute, we provide the most sophisticated diagnostic and treatment procedures available today. Columbia-Presbyterian has invested nearly \$40 million in new technology and expertise to strengthen its leadership position in cardiovascular medicine and research.

The Interventional Cardiology Center is totally new and has been designed as a state-of-the-art patient care and research facility. Our Heart Failure Center is the largest and most advanced in the nation.

Our heart transplant program is the nation's most active, and we have unrivalled experience in other key areas. Cardiac catheterization was developed at Columbia University in the 1940s, earning a Nobel Prize for the innovation.

Our clinical services are driven by leading edge research conducted at Columbia University College of Physicians and Surgeons, which receives more Government funding for biomedical research than any other medical school in the metropolitan New York area.

## LEADING TECHNOLOGY

### The Future of Cardiac Catheterization

The new Interventional Cardiology Center is the only catheterization laboratory in the region designed and built virtually from the ground up. Staffed by cardiac interventionalists and specially trained cardiac radiologists, it offers a full range of services, caring for the most critically ill patients, as well as providing a comfortable and attractive setting for procedures done on an outpatient basis.

Using the newest technology, the Center conducts every important catheter-based procedure, including *intravascular echocardiography*. Our Center's proximity to echocardiography and other heart imaging facilities-which include MRI and PET-is unique, making correlation studies and combination procedures possible.



### Procedures performed in multidisciplinary (adult) Interventional Cardiology Center:

- Diagnostic cardiac catheterization
- Directional atherectomy
- Assisted angioplasty
- Intracoronary thrombolysis
- Percutaneous transluminal coronary angioplasty
- Investigational procedures e.g. ultrasonic thrombolysis
- Stenting radial artery PTCA balloon valvuloplasty

### Pediatric Cardiac Catheterization and Electrophysiology Laboratory Procedures:

- Diagnostic cardiac catheterization
- Percutaneous balloon valvuloplasty
- Coil embolization vascular procedures
- Pediatric radiofrequency ablation
- Blade atrial septectomy
- Balloon atrial septostomy
- Investigational procedures in pulmonary hypertension

The latest technology is available in the Interventional Cardiology Center. This is the only catheterization laboratory in the area that has been planned and built as one complete unit. Allan Schwartz, M.D., is the director.

#### A New Generation in Heart Imaging

The Heart Institute has two state-of-the-art Magnetic Resonance Imaging units and it is the only center in the tri-state area using MRIs with spectroscopy to assess biochemical changes in myocardium.

Glucose metabolism studies with PET are proving instrumental in indicating what damaged heart tissue is viable and can be successfully revascularized.

Our PET Center will supply radionuclides to all other PET scanners in the metropolitan area.

The Echocardiography Laboratory performs intravascular as well as transesophageal echocardiography. Physicians here have access to the area's only computerized digital equipment for exercise echocardiography. The laboratory is also evaluating a promising three-dimensional echocardiography technique that was developed at the Medical Center.

The Pediatric Echocardiographic Laboratory specializes in the diagnosis of congenital heart disease, intra-operative echocardiography and fetal sonography.

In addition to studying heart structure and function, state-of-the-art MRI units with spectroscopy capability perform metabolic studies of heart tissue.

#### Controlling Heart Rhythm Disturbances

The Heart Institute's Arrhythmia Control Unit established the nation's first electrophysiology laboratory and is a world leader in the study, diagnosis and treatment of heart rhythm disturbances in adults and children.

#### Pioneering Work in Heart Failure Research & Treatment

The clinicians and researchers in our Heart Failure Center represent the widest range of work in this field in the nation. No other program offers our unique diagnostic techniques or provides patients with as many surgical and pharmacological treatment options. Only at this center is every major drug currently being used or studied for heart failure available.

#### UNIQUE PEDIATRIC & ADULT CARDIAC CARE EXPERIENCE



The Heart Institute has the world's most active heart transplant unit, and is the only center in the area using Left Ventricular Assist Devices as a bridge to transplantation.

Heart Institute cardiac surgeons are developing a program in cardiomyoplasty. The only heart-lung, single-lung, and double-lung transplants in the New York area are done at Columbia-Presbyterian, where all adult and pediatric cardiac surgical teams include anaesthesiologists specially trained in cardiovascular surgery.

Because of the success of pediatric cardiology programs, many children with congenital heart defects are surviving into adulthood. At Babies Hospital, the largest children's hospital in New York City, we care for this special population. The management of congenital heart defects is an evolving subspecialty.

#### Caring for Children

Babies Hospital is the only hospital in Manhattan devoted solely to the care of children. For many years, it has been a world referral center for children with serious heart disorders. Cardiac surgeons at Babies Hospital completed the first successful pediatric heart transplant in 1982. The Heart Institute, with one of the nation's most active programs in complex cardiac surgery on newborns, remains one of the few centers performing heart transplants in children.

The Institute has the only center dedicated solely to lipid disorders in children in the tri-state area, as well as the nation's only Pediatric Pulmonary Hypertension Center, where clinical trials are elucidating the causes of pulmonary hypertension and examining drugs to control it.





Babies Hospital has the only Catheterization and Electrophysiology Laboratory in the area that is solely for pediatric patients. The operating rooms for cardiac surgery and recovery rooms in Babies Hospital are specially designed for children. Parents can accompany their children to the operating rooms and stay with them until they are asleep.



Babies Hospital is a world referral center for complex pediatric heart problems. Welton Gersony, M.D., is director of pediatric cardiology. Babies Hospital

Operating rooms specially designed for children  
 Pediatric Anesthesiology team  
 Pediatric Recovery Unit  
 Pediatric Cardiac Catheterization & Electrophysiology Laboratory  
 Preadmission Orientation Program  
 Pediatric Open Heart Surgery  
 Pediatric Heart and Heart-Lung Transplant  
 Hi-Risk Neonatal Open Heart Surgery

A young girl, whose arrhythmia was cured by radiofrequency ablation, undergoes a stress test during a check-up.

## CLINICAL INVESTIGATIONS

Research conducted here benefits patients worldwide. We rank ninth in the nation among medical schools in receipt of Government funds for medical research. Clinical trials can be of great value to patients. Multiple programs in congenital heart disease are ongoing in the Division of Pediatric Cardiology.

We urge physicians to enroll patients in appropriate studies, among them:

TIMI-6 (Thrombolysis In Myocardial Infarction)  
 MUSTT (the Multicenter UnSustained Tachycardia Trial)  
 CAPTEN (Captopril After Thrombolysis Trial)  
 Intravascular Ultrasound Protocol Involving Transplant Patients



The Columbia-Presbyterian Heart Institute is a leader in the diagnosis and treatment of heart rhythm disturbances and conduction disorders. James Reiffel, M.D., discusses an electrophysiology procedure with a patient.

## Breakthrough Research

Researchers at the Heart Institute are conducting correlation studies in our catheterization and imaging facilities to ascertain which of the various diagnosis and treatment modalities are least invasive and most effective. Investigators are determining whether Magnetic Resonance Imaging is a better noninvasive means than aortograms or peripheral angiograms for assessing the velocity of blood flow through individual arteries.

Heart Institute researchers are evaluating the potential of intravascular ultrasound in predicting which lesions will recur after angioplasty.

In addition, preliminary work is under way to develop ultrasonic thrombolytic devices. Heart Institute cardiologists are developing transcatheter interventional techniques for both coronary artery disease and the ablation of ventricular and supraventricular arrhythmias.

The Heart Institute conducts pacemaker research as well. Of particular interest are advanced dual chamber devices, physiologic pacing, special sensor technology, antiarrhythmia pacing and pacing the transplanted heart.

Nuclear cardiologists at the Heart Institute are evaluating a dual isotope imaging technique using indium-113 labelled antimyosin and thallium-201 that they developed to determine its usefulness in indicating which heart attack patients are at risk for further ischemic events.



## A Tradition of Innovation

First practical oxygen tent  
First clinical use of laser beam  
First successful pediatric heart transplant  
First heart transplants on patients maintained on intra-aortic balloon pumps  
First clinical and research use of right heart catheterization  
First demonstration of reentrant arrhythmias in humans by transcatheter recording and pacing techniques  
First mapping of heart's electrical conduction system in infants and children

Adult cardiac patients are cared for in the new Milstein Hospital Building.

### 24-HOUR SERVICES FOR PHYSICIANS 1-800-5-HEART-2

The Heart Institute is committed to establishing strong relationships with referring physicians. They can take advantage of our resources by calling the Institute's Cardiac Outreach Program (1-800-5-HEART-2) at any time, around the clock. A professional, clinically trained in cardiology, will answer the call, take a history and triage the patient.

Many procedures—including PTCA (Percutaneous Transluminal Coronary Angioplasty) and cardiac catheterization—are available 24 hours a day.

The Heart Institute's Cardiac Outreach Program also coordinates Continuing Medical Education events throughout the Greater New York area, and schedules physician-to-physician instruction in echocardiography and other clinical skills. Physicians interested in gaining new expertise are welcome to inquire.

You are invited to tour our facilities. Please call Cardiac Outreach Director Deborah Schwartz-McGregor at 1-800-5-HEART-2 or 212-305-4993 for an appointment.



Robyn J. Barst, M.D., heads the area's only Pediatric Pulmonary Hypertension Center.

### PATIENT AMENITIES

Children with heart disease are cared for in Babies Hospital, where staff is attuned to the special needs of children and their families. Adult patients are treated and hospitalized in the new Milstein Hospital Building overlooking the Hudson River.

Deluxe accommodations are available in the McKeen Pavilion, which features ultramodern patient accommodations, concierge, room service and a restaurant for patients and visitors. McKeen patients also may enjoy tea accompanied by pianists and other musicians in the McKeen's skylit atrium. Pavilion patients who are well enough can use McKeen's meeting rooms and its array of business services.

The Allen Pavilion is a 300-bed, full-service community hospital located in northern Manhattan at 220th Street and Broadway. It offers a wide range of diagnostic and treatment services.

Patients at the McKeen Pavilion enjoy luxurious accommodations and special services like those in fine hotels.

#### Easy Access

Columbia-Presbyterian Medical Center is within easy reach of midtown Manhattan, New Jersey, and Westchester. The Holiday Inn, a five-minute drive from the Medical Center, provides free 24-hour shuttle service direct to the Milstein Hospital Building.

Valet parking is available at the Medical Center, and reduced long-term rates may be arranged. Handicapped transport can be provided at the parking lot entrance.



**WARNING: The data entered in this form will be submitted without encryption. If you do not feel secure submitting in clear over the network, do not use this form to submit data.**

## **Columbia-Presbyterian Medical Center**

### ***Physician-Referral Form***

*telephone (800)543-2782 / fax number (212)305-9495 / e-mail [michaelson@cusurg.cpmc.columbia.edu](mailto:michaelson@cusurg.cpmc.columbia.edu)*

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Date  
About the Referring PhysicianName:  
Telephone #:  
Fax #:  
Address:  
Hospital Affiliation:  
About the PatientName:  
Phone number:  
Address:  
DOB:  
Social Security #:  
Insurance:  
Policy number:  
Mother's First Name:  
Father's First Name:  
Medical HistoryDX:  
Intubated:  
Drip:  
Lines:  
Medications:  
Type of BedPlease select one:  
Scheduled Admission  
Emergency Admission  
Ambulance Transportation Needed  
Yes  
NoName of Hospital  
Telephone  
Additional Comments:

Click here to mail Request

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Socrates A. Socratous Department of Medical Informatics, Columbia University

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## **Columbia Presbyterian Medical Center**

### ***Patient Referral Form***

*telephone (800)543-2782 / fax number (212)305-9495 / e-mail [michaelson@cusurg.cpmc.columbia.edu](mailto:michaelson@cusurg.cpmc.columbia.edu)*

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Date  
About the PatientName:  
Phone number:  
Address:  
DOB:  
Social Security #:  
Insurance:  
Policy number:  
Mother's First Name:  
Father's First Name:  
About Your Local PhysicianName:  
Telephone #:  
Fax #:  
Address:  
Hospital Affiliation:  
Your Medical HistoryDiagnosis:  
Major Complaints/Symptoms:  
Medications:  
Additional Comments:

Click here to send request

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Socrates A. Socratous Department of Medical Informatics, Columbia University

## Appendix 9

This is a letter from Brigadier General Theodore C. Almquist, Commander 89<sup>th</sup> Medical Group, informing Cardiology Clinic patients to look to other military or civilian medical facilities for care.

FROM: 89th Medical Group/SGOMC  
Cardiology Clinic  
1050 West Perimeter Road  
Andrews AFB MD 2076-6600

4 March 1996

TO: Cardiology Clinic Patients

SUBJECT: Alternative Medical Treatment Opportunities and Reduced Workload Capacity

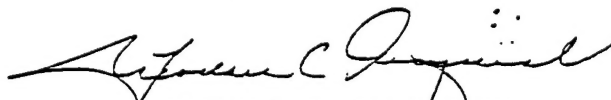
We realize many of our patients have received care by our providers in the Cardiology Clinic at Malcolm Grow Medical Center (MGMC) for many years. Due to a decrease in manning with the loss of one of our four cardiologists, we will not be able to provide care for all of our patients at this time. We respectfully request that you seek cardiology care with a cardiologist of your choice at another National Capital Area Military Treatment Facility (MTF), or a civilian provider of your choice.

We apologize for this inconvenience and offer these alternatives. You may choose to contact the Cardiology Department at the Naval Hospital, Bethesda at (301) 295-4500 or Walter Reed Army Medical Center at (202) 782-6412. We suggest you visit the MGMC Member Services Office, located on the first floor of the Main Building, Room C1-11 for a complete listing of military MTF's and alternate CHAMPUS providers in the area. The hours of operation are Monday through Friday from 0730 - 1700 and can be reached by telephone at (301) 981-5615 or 9840.

This letter is not a Non-Availability Statement nor approval for one. Please refer to your CHAMPUS Handbook or call Member Services Office for more information. If you have emergency cardiac care needs, please report to the nearest emergency department.

We regret this inconvenience and hope that personnel support is expanded so we may once again be able to offer your requested care in the Cardiology Clinic. This action does not affect your eligibility for care in other MGMC clinics or other specialty clinic services. Again, we sincerely regret we are unable to meet your needs at this time.

Sincerely,



THEODORE C. ALMQUIST  
Brig Gen, USAF, DC  
Commander

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